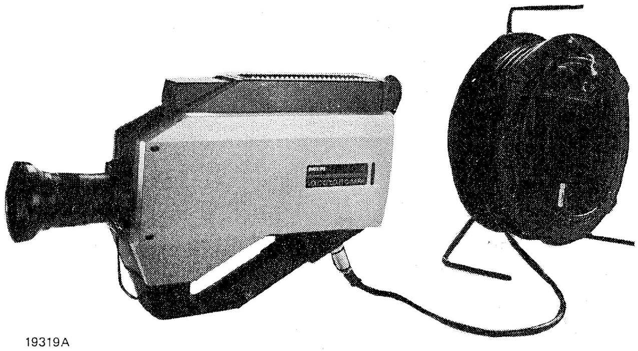
Portable Video Colour Camera V 200/00/15

Service
Service
Service



19319A

Service Manual

CONTENTS:

Chapter

I General information

II Block diagram camera
Circuit descriptions

III Service adjustments

IV Wiring diagrams
Circuit diagrams
Printed boards

V Exploded views
List of parts

VI Additional Service Information

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Serviçio

Subject to modification

(GB) 4822 726 13134

Printed in The Netherlands

PHILIPS

CS 68 729

Service Information

VI-1b

VIDEO COLOUR CAMERA V200

Concerns	Changed	Reason	Introd. wk/code
Diagram F	**3039, 3040, 3041** into 4.7 k	Correction of the manual	–
Diagram H	**3584** into 1,18 k	Correction of the manual	–
Diagram K	**2326** into 100 μF	Correction of the manual	–
Micr. Pan. M	**3629 (100E)** added beween 3S1 and 3M2	Prevent shorting +10 via the trigger switch	007/A01
Micr.Pan. M	**2613 (2,2 n)** changed into 1 n **3617 (2,2 k)** changed into 6,8 k	Higher audio sensitivity	011/A02
Proc. 1 Pan. F	**2030 (22 n)** and **2041 (22 n)** changed into 180 n	Suppression of stripes during white balancing	014/A03
Proc. 1 Pan. F	**3058 (1,5 k)** changed into 4.7 k	Switching off the contour completely during white balancing	014/A03
Puls gen. Pan. L	**3386 (5,1 k)** changed into 4.99 k	Hcd puls is sometimes too small	025/A04
Proc. 1 Pan. F	**3023, 3060** and **3061 (22 k)** changed into 33 k **3022 (6,8 k)** changed into 8,2 k	White balancerange extended to colourtemps of 10.000° k	025/A04
Dark curr. Pan. K	**3332 (47 k)** deleted	Limiting the max. darkcurrent at 20 nA at 45°C	025/A04
Vidicon tubes	**XQ1272** changed into 20PE14C codenr. 4822 131 90056.	Improved quality, and addition of covertape pos. 116, 121, 139	033
Viewfinder Pan. N	**3663 (1k)** changed into 2.2 k codenbr. 4822 105 10381	Wider adjustment range (value) and less hindrance of the wiring (execution)	037
Correction Pan. V	New added: video corrector Pan. V (see also page IV-8 II) codenbr. 4822 212 50109	Minimizing the difference in the outputs of the pick-up tubes caused by unequal optical losses, or unequal sensitivity of the target surfaces.	038/A05
Preampl. Pan. E	**2773 (22 pF)** added on panel. New lay-out (see page IV-8-1)	Better frequency response	2500 sets
Proc. 2 Pan. G	**3946 (1 k)** changed into 750 Ω **3955 (15 k)** added between 6 (6848) and 5 (6846)	Better colour reproduction Cancel the unwanted shift of the white balance range due to the changes of proc. 2 panel.	051/A06
Reg. + White Balance Pan. B	**3431 (100 k)** changed into 68 k		

Copyright reserved. Confidential information for Service-dealers

Printed in the Netherlands

Puls gen. Pan. L	**3382 (1 k)** added between 8 (6377) and +5a (in some camera's)	Wp sometimes too small	052

I	GENERAL INFORMATION	I
II	BLOCK DIAGRAM CAMERA CIRCUIT DESCRIPTION	II
III	SERVICE ADJUSTMENTS	III
IV	WIRING DIAGRAMS CIRCUIT DIAGRAMS PRINTED BOARDS	IV
V	EXPLODED VIEWS LIST OF PARTS	V
VI	ADDITIONAL SERVICE INFORMATION	VI

CHAPTER I General Information

Page		Fig.
I-1	Introduction	I-1
I-2	Technical data	
I-3	Dimensions	I-2
I-4	Controls and connections	I-3
I-5	Demounting housing	I-4
I-6	Location of components in camera	I-5
I-7	Survey of nomenclature and abbreviations	
I-8,9	Survey of symbols	
I-9	Survey of connections of semi conductors	

INTRODUCTION (see Fig. I 1...3)

The portable video colour camera V200, which is suitable for domestic use, can be connected to a video recorder and/or a TV-receiver/monitor via the co-supplied adapter. The camera can be transported in the co-supplied carrying case.

The camera incorporates:

- 3 vidicons;
- a variogon lens with focus- and zoom control;
- an automatically controlled diaphragm, which is closed, when the camera is not used;
- a macro button, releasing the lens locking;
- a backlight- and sensitivity control switch;
- an electret microphone, which is switched off automatically when an external microphone is connected;
- an electronic viewfinder with hinged magnifying eyepiece;
- two LED-indicators for interaction of remote control videorecorder VR2020, controlled by trigger switch in handgrip,
  green means: recording can be made
  red means: recording command not accepted;
- mounting hole for tripod 3/8";
- adapting ring from 3/8" to 1/4" mounting hole for tripod;
- an automatically rechargeable battery for digital memory of previous adjustments of registration and white balance.

By pressing the button "white balance", the part of the scene which is indicated in the viewfinder by the small black square, is referred to white. By pressing at the same time the buttons "white balance" and "registration", the camera is automatically converged.
The lens cover is executed as a dia cap for this adjustment.

The adapter incorporates:

- a reel with a camera connecting cable and a ten-pole connector.
- a mains cord; the reel is locked if the mainscordplug is plugged into the mainssocket of the adapter;
- a main switch;
- a power supply;
- an interface;
- a modulator; with a long thin insulated screwdriver the UHF-channel can be adjusted;
- an antenna connecting cable;
- sockets for: mains cord, HF, video, audio + remote control VR 2020.

Warning:

- The set is not splashproof
- Do not direct the camera lens to the sun.

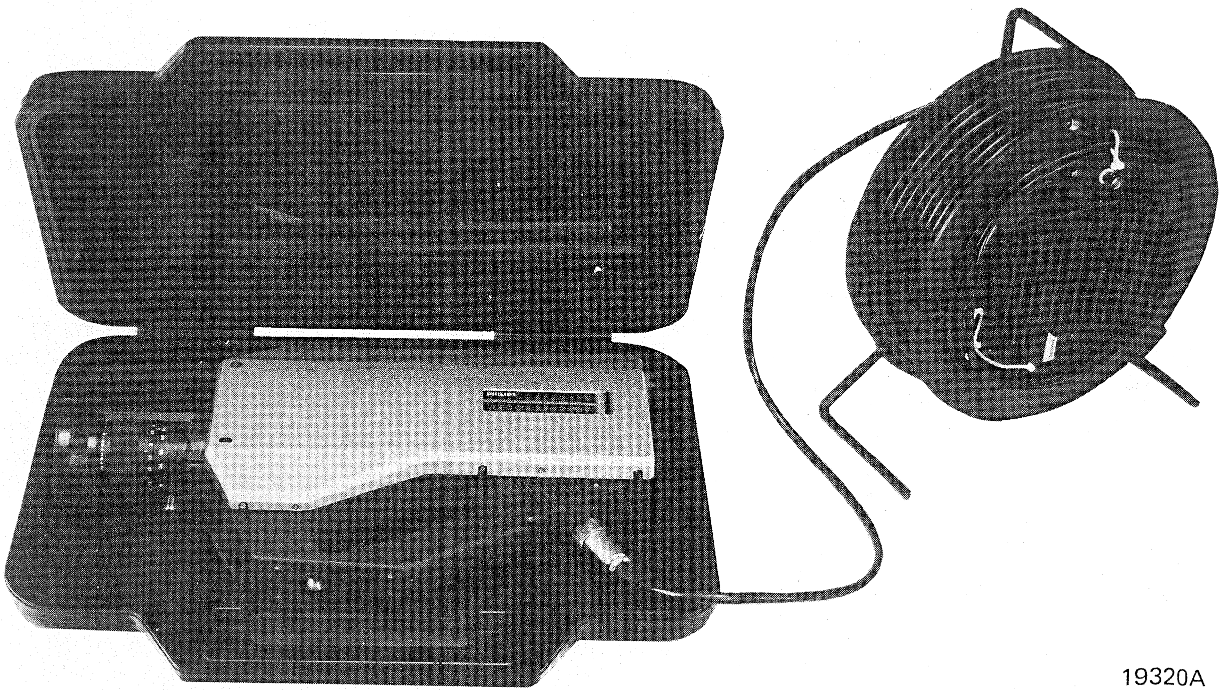


Fig. I-1

TECHNICAL DATA

General

- Mains voltage /00 : 220 V ~ + 10, - 15 %
- Mains voltage /15 : 240 V ~ + 10, - 15 %
- Possible mains voltages : 110 - 120 - 220 - 240 V ~, + 10, - 15 %, by changing the connections on the transformer
- Mains frequency : 48 - 62 Hz
- Allowed ambient temp. : 0° - + 35°C within spec.
  - 5° - + 45°C acceptable operation
  - 40° - + 70°C storage
- Allowed humidity : 20 - 95 %R.H. operation up to 99 % R.H. storage
- Tripod mounting hole : 3/8" whitworth; 1/4" (by using supplied reducing nut)
- Cable lengths : Camera cable 20 m.
  mains cord 2.5 m.
  H.F. cable 2 m.
- Protection delay : 30 - 45 sec. after switching on.

Adapter:

- Dimensions : See Fig. I-2
- Weight : 5 kg.
- Power consumption : 30 Watts (1,5 Watts when camera is disconnected)
- DC output : + 5 V, - 5 V ± 2 % (measured at camera end of the cable), 1,25 A
- H.F. output : 2,8 - 4,3 mV across 75 Ω
- Modulator frequency : 575 MHz (Ch. 34) (Modulator is adjustable from 543...624 MHz (Ch 32 - 42)
- Fuses : 2 x 3,15 A delayed
  1 x temp.fuse in transformer
- Protection : against short circuit and overvoltage.

Camera

- Dimensions : See Fig. I-2
- Weight : 3 kg.
- Power consumption : 12,5 Watts
- DC input : + 5 V, - 5 V
- DC output : 12,8 V
- Lens : Schneider Variogon F = 1.8 8 - 64 mm + Macro position
- Diaphragm : Double vane type, autocontrolled by Video Signal
- Pick up tubes : type XQ 1272 (3x) 2/3" hybrid, separate mesh vidicons
- Picture tube : type 40 CB 4 1½" B/W 3 : 4 ratio with magnetic deflection
- Min. luminance level for full video : 134 cd/m^2 ± 20 %, with 3200° K colour temp.
- Automatic controls : diaphragm
  dark current compensation
  audio output
  Registration } when pressing buttons
  White balance } when pressing buttons

Resolution (W.R.T. 100kHz) in the centre of the picture

- Lens : < - 6dB at 3 MHz with F = 1,8
- Pick up tubes : < - 12dB at 3 MHz
- Viewfinder CRT : > 4 MHz at min. luminance level
- Video ouput : 1 Vpp CVBS ± 10 % across 75 Ω
  Frequency response : - 3 dB at 3.8 MHz
  S/N ratio : > 40dB unweighted
- Audio output : 200 mV ± 6dB across 600 Ω
  Frequency response : - 3dB at 350 Hz - 10 kHz
  S/N ratio : > 40dB with earcurve-filter A
  Harmonic distorsion : < 3 % at 1kHz
  External connection : 5 pole DIN 180°
  Sensitivity
  . Microphone : 1,25 mV across 3.3k Ω
  . Auxiliary : 350 mV across 1M Ω

TECHNICAL DATA

General

– Mains voltage /00	: 220 V ~ + 10, − 15 %
– Mains voltage /15	: 240 V ~ + 10, − 15 %
– Possible mains voltages	: 110 - 120 - 220 - 240 V ~, + 10, − 15 %, by changing the connections on the transformer
– Mains frequency	: 48 - 62 Hz
– Allowed ambient temp.	: 0° - + 35°C within spec. − 5° - + 45°C acceptable operation − 40° - + 70°C storage
– Allowed humidity	: 20 - 95 %R.H. operation up to 99 % R.H. storage
– Tripod mounting hole	: 3/8" whitworth; 1/4" (by using supplied reducing nut)
– Cable lengths	: Camera cable 20 m. mains cord 2.5 m. H.F. cable 2 m.
– Protection delay	: 30 - 45 sec. after switching on.

Adapter:

– Dimensions	: See Fig. I-2
– Weight	: 5 kg.
– Power consumption	: 30 Watts (1,5 Watts when camera is disconnected)
– DC output	: + 5 V, − 5 V ± 2 % (measured at camera end of the cable), 1,25 A
– H.F. output	: 2,8 - 4,3 mV across 75 Ω
– Modulator frequency	: 575 MHz (Ch. 34) (Modulator is adjustable from 543...624 MHz (Ch 32 - 42)
– Fuses	: 2 x 3,15 A delayed 1 x temp.fuse in transformer
– Protection	: against short circuit and overvoltage.

Camera

– Dimensions	: See Fig. I-2
– Weight	: 3 kg.
– Power consumption	: 12,5 Watts
– DC input	: + 5 V, − 5 V
– DC output	: 12,8 V
– Lens	: Schneider Variogon F = 1.8 8 - 64 mm + Macro position
– Diaphragm	: Double vane type, autocontrolled by Video Signal
– Pick up tubes	: type XQ 1272 (3x) 2/3" hybrid, separate mesh vidicons
– Picture tube	: type 40 CB 4 1½" B/W 3 : 4 ratio with magnetic deflection
– Min. luminance level for full video	: 134 cd/m^2 ± 20 %, with 3200° K colour temp.
– Automatic controls	: diaphragm dark current compensation audio output Registration } when pressing buttons White balance } when pressing buttons

Resolution (W.R.T. 100kHz) in the centre of the picture

– Lens	: < − 6dB at 3 MHz with F = 1,8
– Pick up tubes	: < − 12dB at 3 MHz
– Viewfinder CRT	: > 4 MHz at min. luminance level
– Video ouput	: 1 Vpp CVBS ± 10 % across 75 Ω
Frequency response	: − 3 dB at 3.8 MHz
S/N ratio	: > 40dB unweighted
– Audio output	: 200 mV ± 6dB across 600 Ω
Frequency response	: − 3dB at 350 Hz - 10 kHz
S/N ratio	: > 40dB with earcurve-filter A
Harmonic distorsion	: < 3 % at 1kHz
External connection	: 5 pole DIN 180°
Sensitivity	
. Microphone	: 1,25 mV across 3.3k Ω
. Auxiliary	: 350 mV across 1M Ω

Dimensions

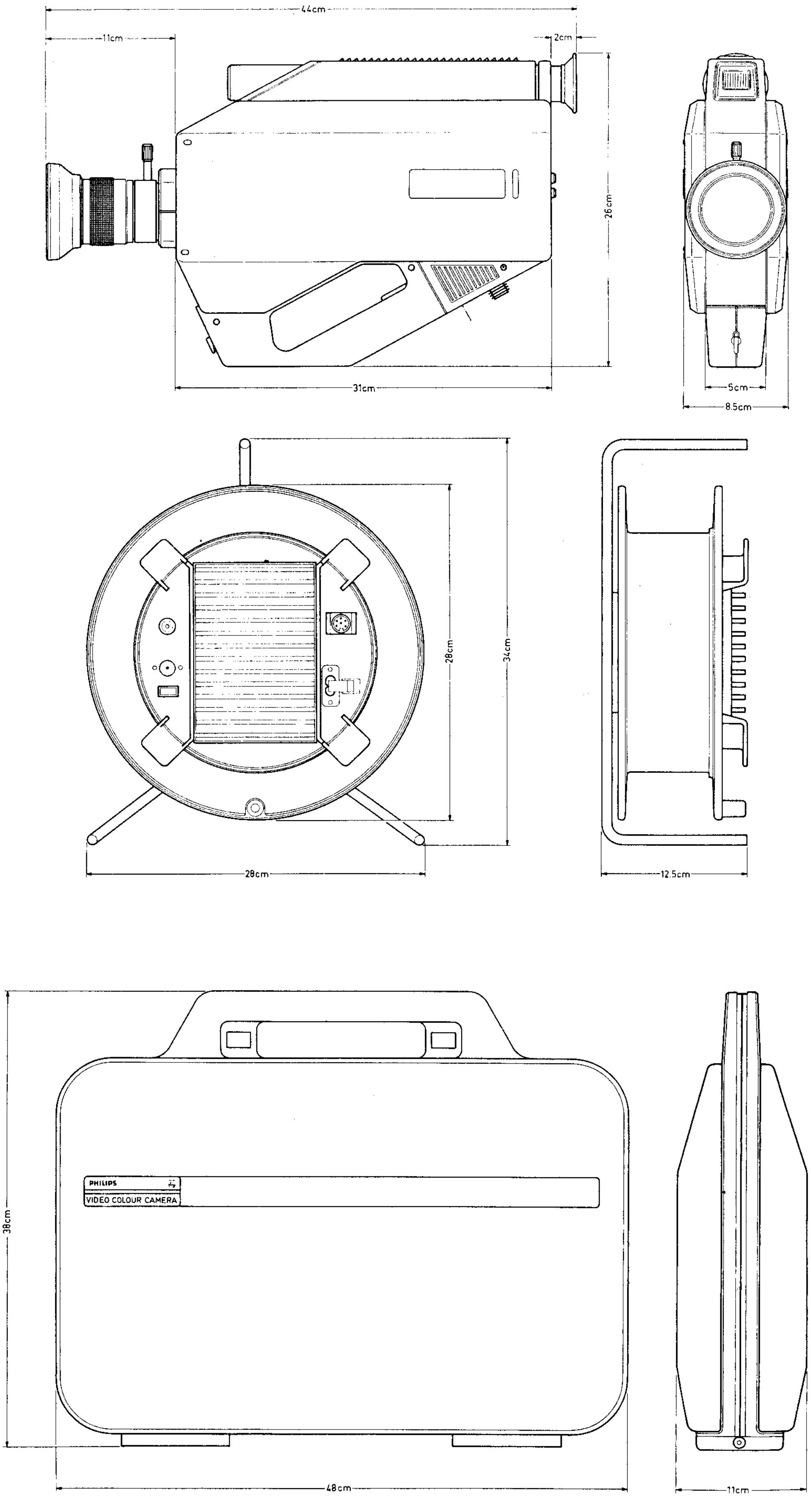

44cm
11cm
2cm
26cm
31cm
5cm
8.5cm
28cm
34cm
28cm
12.5cm
PHILIPS
VIDEO COLOUR CAMERA
38cm
48cm
11cm

Fig. I-2

18972F18

Controls and connections

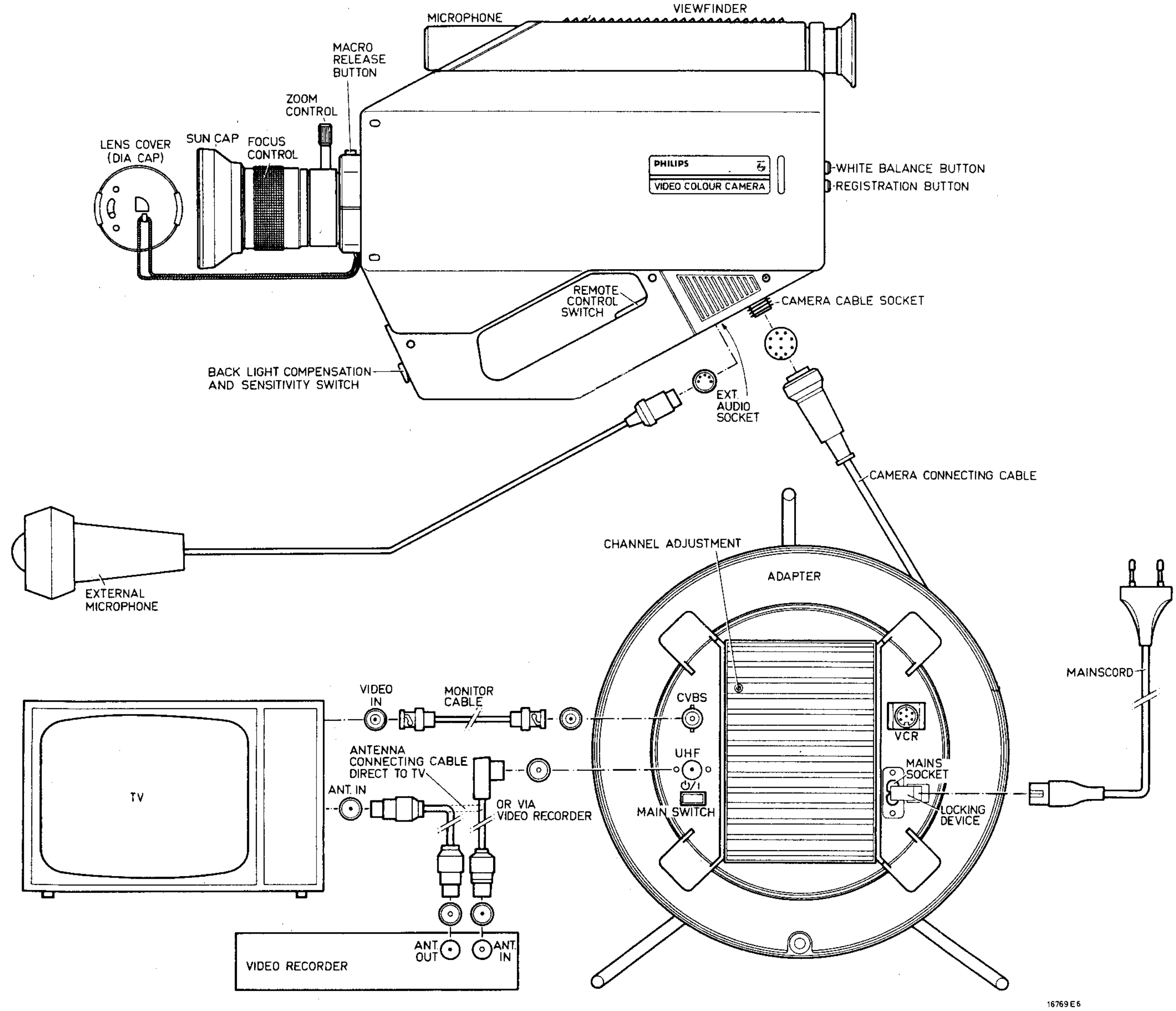

MICROPHONE
VIEWFINDER
MACRO RELEASE BUTTON
ZOOM CONTROL
LENS COVER (DIA CAP)
SUN CAP
FOCUS CONTROL
PHILIPS
VIDEO COLOUR CAMERA
WHITE BALANCE BUTTON
REGISTRATION BUTTON
REMOTE CONTROL SWITCH
CAMERA CABLE SOCKET
BACK LIGHT COMPENSATION AND SENSITIVITY SWITCH
EXT. AUDIO SOCKET
CAMERA CONNECTING CABLE
CHANNEL ADJUSTMENT
ADAPTER
EXTERNAL MICROPHONE
MAINSCORD
VIDEO IN
MONITOR CABLE
CVBS
VCR
TV
ANTENNA CONNECTING CABLE DIRECT TO TV
UHF
MAINS SOCKET
ANT. IN
OR VIA VIDEO RECORDER
MAIN SWITCH
LOCKING DEVICE
VIDEO RECORDER
ANT. OUT
ANT. IN
16769E6

Fig. I-3

Demounting housing camera

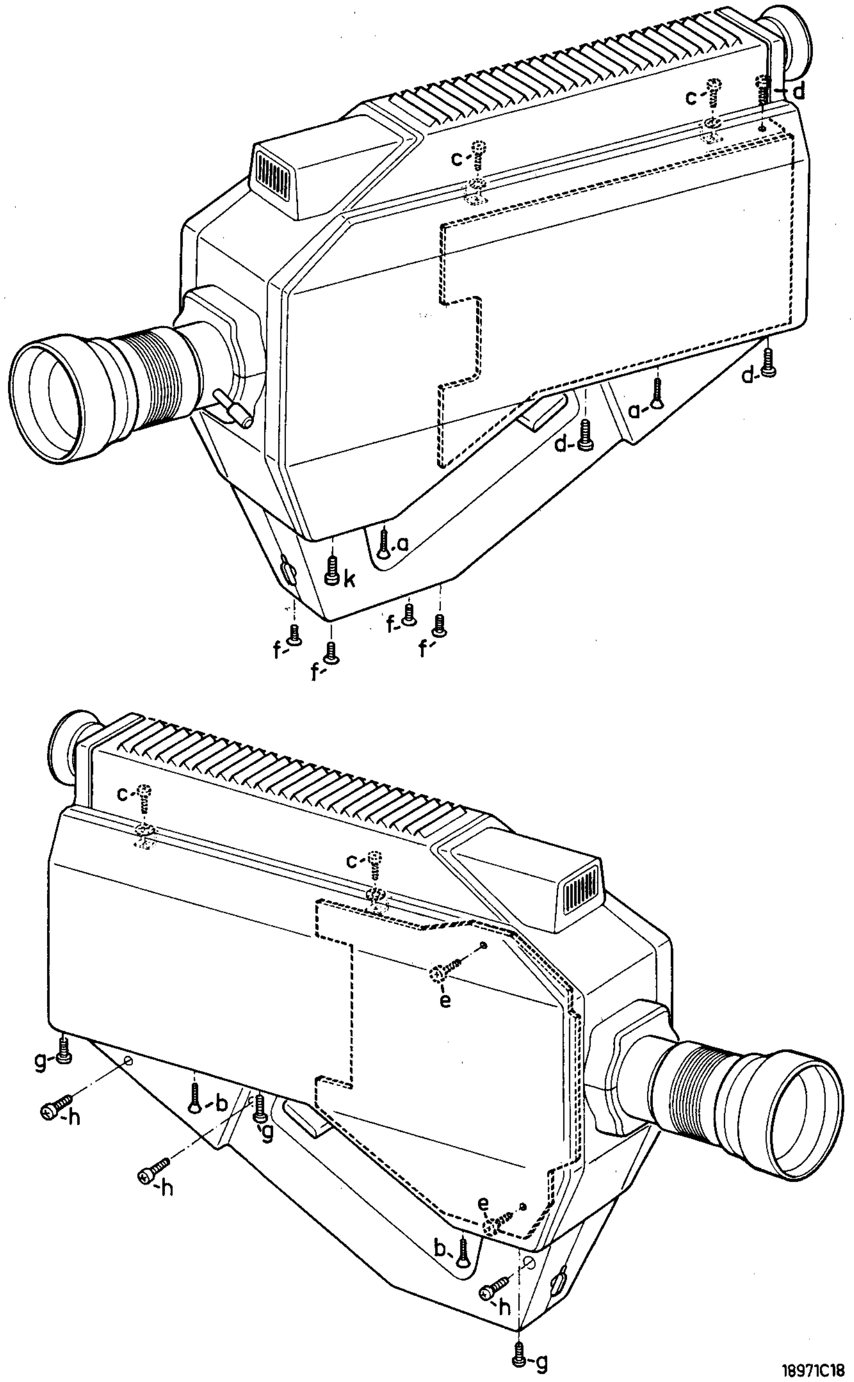


Fig. I-4

Demounting housing camera (see Fig. I-4)		Loosen screws:
For removing	- side plate left	2 x a
	- side plate right	2 x b
	- viewer cover	2 x a + 2 x b + 4 x c
For hinging	- carrier panel	2 x a + 3 x d
	- deflection panel	2 x b + 2 x e
For reaching microphone amplifier - and	backlight compensation - panel	2 x a + 4 x f + 3 x g + 3 x h
Demounting housing adapter (see Fig. V-2)		1 x 23 + 4 x 26 (of reel 203)

Location of components in camera

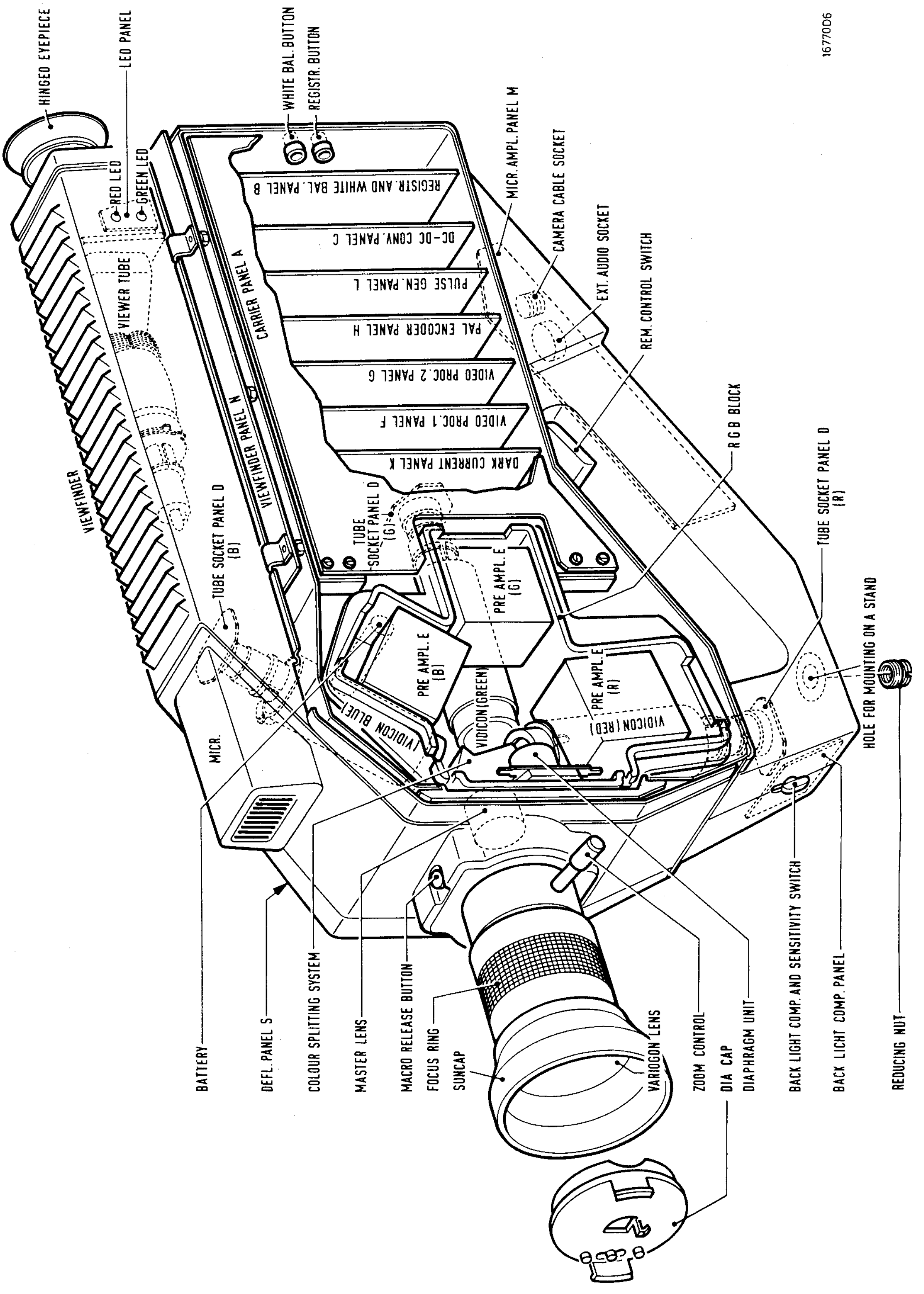

HINGED EYEPIECE
LED PANEL
RED LED
GREEN LED
VIEWER TUBE
VIEWFINDER
TUBE SOCKET PANEL D (B)
VIEWFINDER PANEL N
CARRIER PANEL A
WHITE BAL. BUTTON
REGISTR. BUTTON
REGISTR. AND WHITE BAL. PANEL B
DC-DC CONV. PANEL C
PULSE GEN. PANEL L
PAL ENCODER PANEL H
VIDEO PROC. 2 PANEL G
VIDEO PROC. 1 PANEL F
DARK CURRENT PANEL K
TUBE SOCKET PANEL D (G)
PRE AMPL. E (G)
PRE AMPL. E (B)
PRE AMPL. E (R)
VIDICON (BLUE)
VIDICON (GREEN)
VIDICON (RED)
MICR. AMPL. PANEL M
CAMERA CABLE SOCKET
EXT. AUDIO SOCKET
REM. CONTROL SWITCH
R G B BLOCK
TUBE SOCKET PANEL D (R)
HOLE FOR MOUNTING ON A STAND
MICR.
BATTERY
DEFL. PANEL S
COLOUR SPLITTING SYSTEM
MASTER LENS
MACRO RELEASE BUTTON
FOCUS RING
SUNCAP
VARIOGON LENS
ZOOM CONTROL
DIA CAP
DIAPHRAGM UNIT
BACK LIGHT COMP. AND SENSITIVITY SWITCH
BACK LICHT COMP. PANEL
REDUCING NUT
16770D6

Fig. I-5

V200 Nomenclature

Back focus = optical sharpness over whole zoom range
Back light = lens is facing light source
Bleader = parallel stabilisation
CCC = consumer colour camera
Contour = picture information accentuation
Diaphgram = lens opening reduction device
Diopter = reciprocal value of the focal distance of a lens in meters
Focus = sharpness
Lumen = lightbeam 1 lm = 1 cd.str
Lux = lumen/m^2
Registration = convergence for camera (RGB shift)
Skew = vertical or horizontal angel rotation of picture
Target = light sensitive surface of the vidicon
Trigger = remote control for video recorder
Tripod = stand
Variogon = zoomlens
VCC = video colour camera
White balance = equal RGB signals

Abbreviations in the circuit diagrams

B = blue
Bd = input signal dark current, blue
Bl = blanking pulse
Bp1 = blue signal processing 1
Bp2 = blue signal processing 2
Bu = burst key pulse

Cl = clamping pulse
Cont = contour signal
CVBS = colour video blanking synchronisation signal

D.C. = direct current
D.C. prot. = D.C. protection
Dia = diaphragm

f = filament voltage for the tubes
g = grid
G = green
Gd = input signal dark current, green
Gp1 = green signal processing 1
Gp2 = green signal processing 2

H/2 = pulse with half the line frequency
Hcd = line pulse for converter and dark current control
Hcd sw = Hcd switch
Hd = line pulse for deflection
Hdefl = horizontal deflection view-finder
Hpv = line pulse for viewfinder
Hr = line pulse for registration and white balance
HshB = horizontal shift blue
HshR = horizontal shift red

Idb = dark current regulation pulse, blue
Idg = dark current regulation pulse, green
Idr = dark current regulation pulse, red
Is = signal current

k = cathode
R = red
R.C. = remote control
Rd = input signal dark current, red
Reg sw = registration switch
R.H. = relative humidity
Rp1 = red signal processing 1
Rp2 = red signal processing 2

Sw = switch
Sy = synchronisation pulses

Vb = battery voltage
Vc = voltage control
Vd = frame pulse for deflection
Vda = frame pulse for dark current control
Vddr = frame pulse for deflection, dark current control and registration/white balance
Vr = frame pulse for registration and white balance
VshB = vertical shift, blue
VshR = vertical shift, red
Vt = target voltage
Vv = frame pulse for viewfinder
Vw = frame pulse for white balance

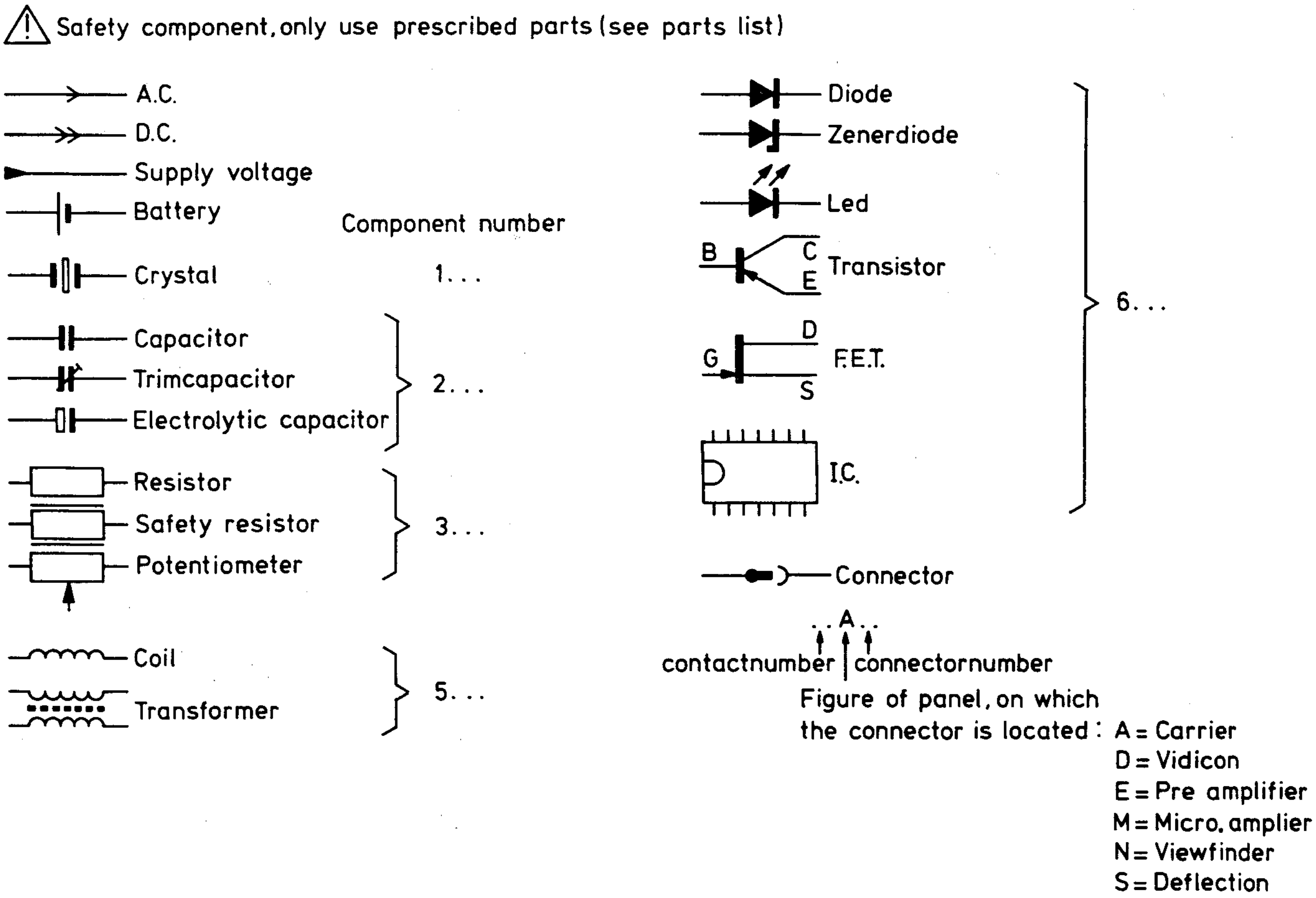
WbB = white balance, blue
WbR = white balance, red
Wbsw = white balance switch
Wp = white control pulse

Yv = Y signal (video without sync) for viewfinder

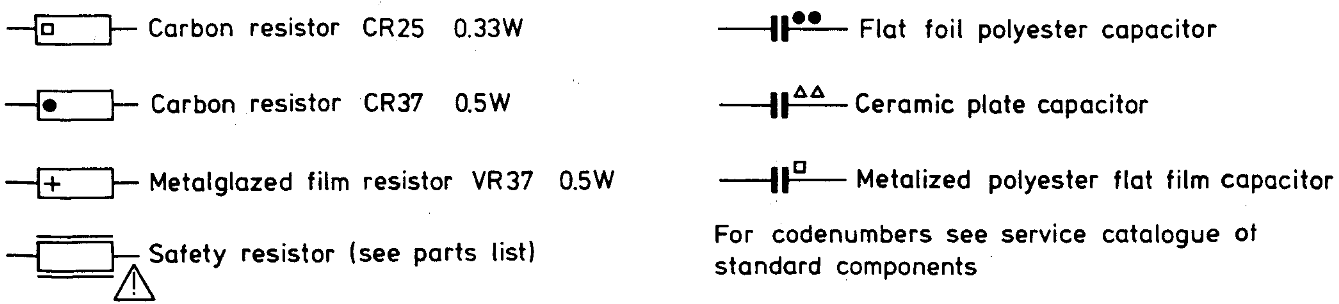
OQ5501 connections

BK = burstkey
CB = composite blanking
CL = clock input
CS = composite sync
DL = double line frequency
H1 = horizontal drive 1
H2 = horizontal drive 2
I = H/2
P = power
V1 = vertical drive 1
V2 = vertical drive 2
Vv = 8 fv (400 Hz)
$\overline{V}_1$. Vv = product of $\overline{V}_1$ and Vv

Survey of symbols


Safety component, only use prescribed parts (see parts list)
A.C.
D.C.
Supply voltage
Battery
Component number
Crystal
1...
Capacitor
Trimcapacitor
Electrolytic capacitor
2...
Resistor
Safety resistor
Potentiometer
3...
Coil
Transformer
5...
Diode
Zenerdiode
Led
B
C
E
Transistor
D
G
S
F.E.T.
I.C.
6...
Connector
..A..
contactnumber
connectornumber
Figure of panel, on which the connector is located:
A = Carrier
D = Vidicon
E = Pre amplifier
M = Micro. amplier
N = Viewfinder
S = Deflection

18826B12

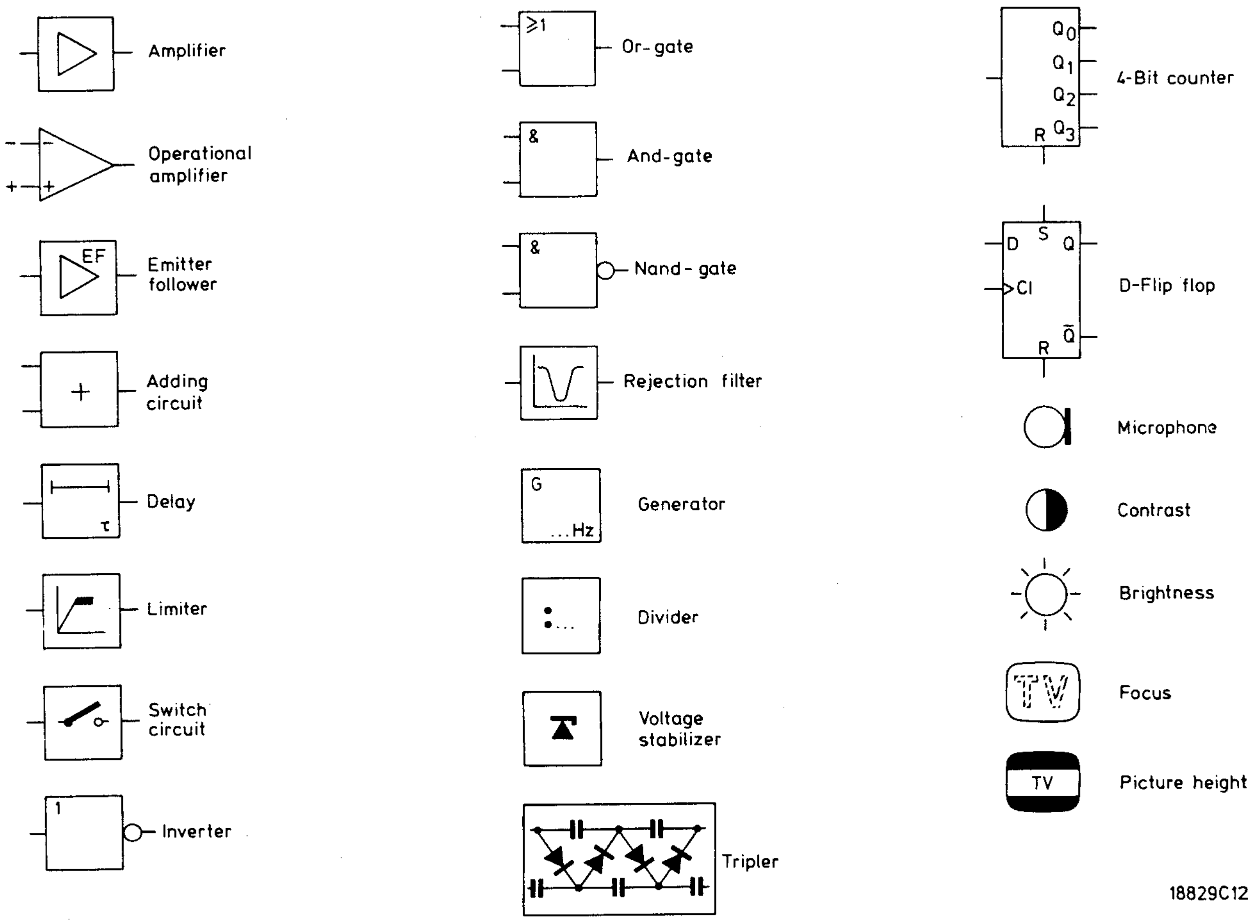

Carbon resistor CR25 0.33W
Carbon resistor CR37 0.5W
Metalglazed film resistor VR37 0.5W
Safety resistor (see parts list)
Flat foil polyester capacitor
Ceramic plate capacitor
Metalized polyester flat film capacitor

For codenumbers see service catalogue of standard components

18827B12

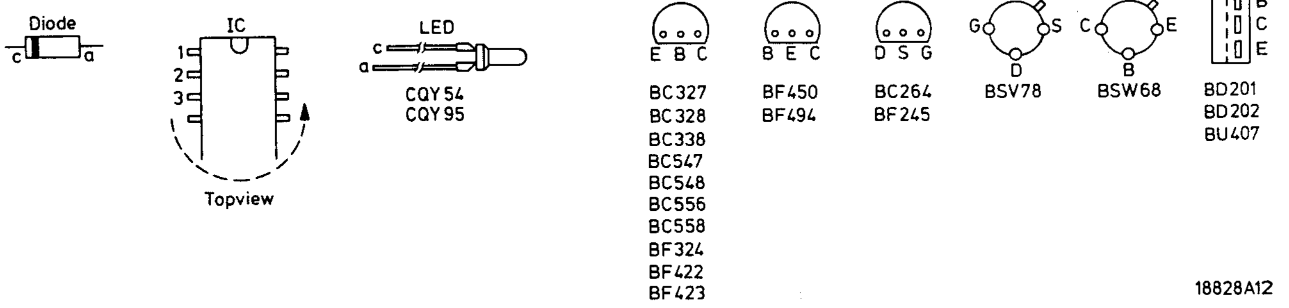
CHAPTER II

Page		Fig.
II-1	Block diagram camera	II-1
II-2...6	Circuit description	
II-2	Optical path	II-2
II-2	Diaphragm control	II-3
II-3	Remote control function	II-4


Amplifier
Operational amplifier
Emitter follower
EF
Adding circuit
Delay
τ
Limiter
Switch circuit
Inverter
1
Or-gate
≥1
And-gate
&
Nand-gate
Rejection filter
Generator
G
...Hz
Divider
Voltage stabilizer
Tripler
4-Bit counter
Q0
Q1
Q2
Q3
R
D-Flip flop
D
S
Q
Cl
R
Q̄
Microphone
Contrast
Brightness
Focus
TV
Picture height
TV
18829C12

Connections of semiconductors

Transistors bottomview


Diode
c
a
IC
1
2
3
Topview
LED
c
a
CQY54
CQY95
E B C
BC327
BC328
BC338
BC547
BC548
BC556
BC558
BF324
BF422
BF423
B E C
BF450
BF494
D S G
BC264
BF245
G
S
D
BSV78
C
E
B
BSW68
B
C
E
BD201
BD202
BU407
18828A12

Blockdiagram camera

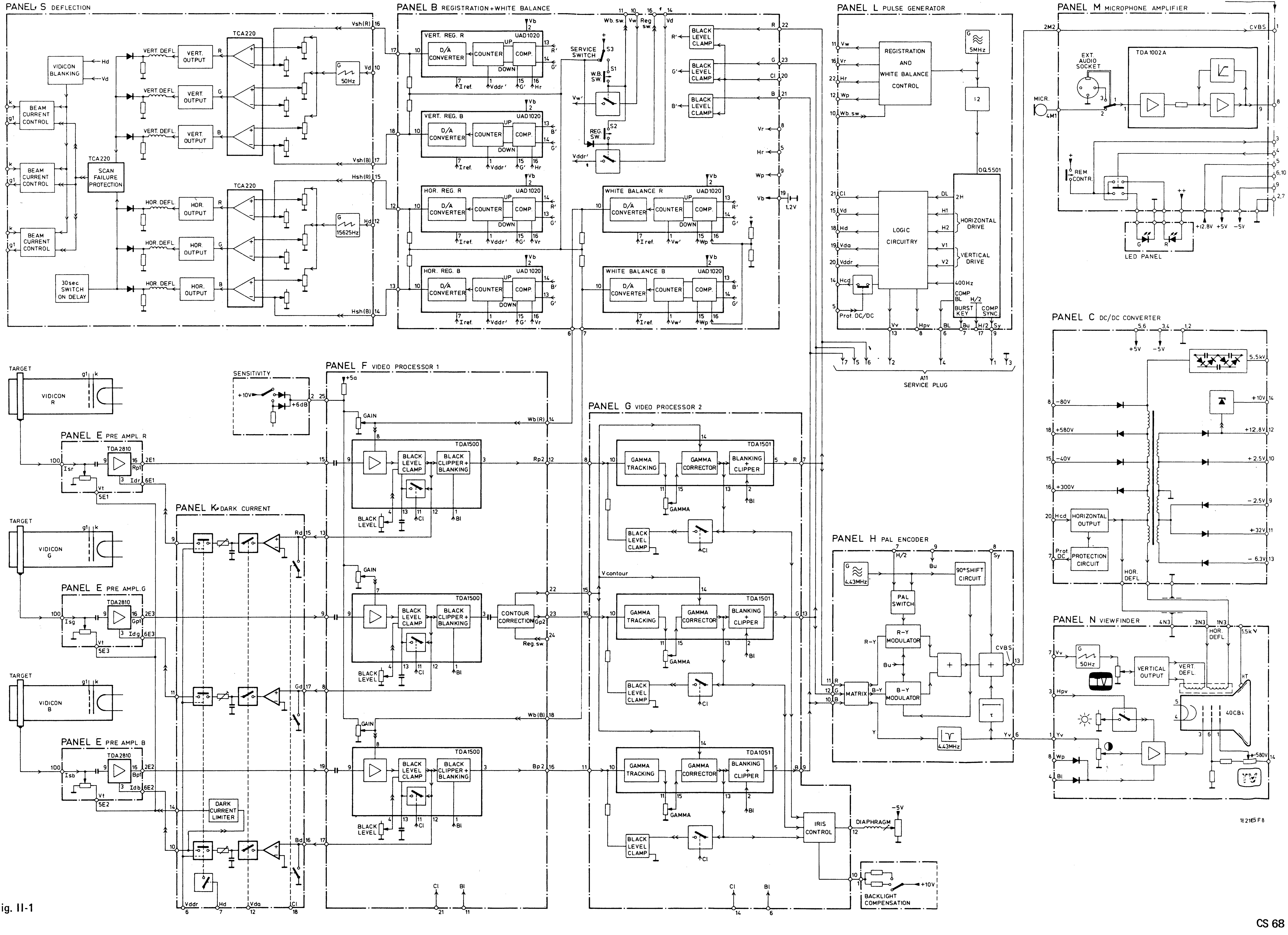

PANEL S DEFLECTION
VIDICON BLANKING
BEAM CURRENT CONTROL
SCAN FAILURE PROTECTION
TCA220
VERT. DEFL
VERT. OUTPUT
HOR. DEFL
HOR. OUTPUT
30sec SWITCH ON DELAY
50Hz
15625Hz
Vsh(R) 16
Vsh(B) 17
Hsh(R) 15
Hsh(B) 14
PANEL B REGISTRATION + WHITE BALANCE
VERT. REG. R
VERT. REG. B
HOR. REG. R
HOR. REG. B
UAD1020
D/A CONVERTER
COUNTER
COMP.
UP
DOWN
Iref.
Vddr'
SERVICE SWITCH
S3
S1
S2
W.B. SW.
REG. SW.
Wb.sw
Reg sw.
BLACK LEVEL CLAMP
WHITE BALANCE R
WHITE BALANCE B
PANEL L PULSE GENERATOR
REGISTRATION AND WHITE BALANCE CONTROL
5MHz
:2
OQ5501
LOGIC CIRCUITRY
HORIZONTAL DRIVE
VERTICAL DRIVE
400Hz
COMP BL
BURST KEY
COMP SYNC
Prot DC/DC
A11 SERVICE PLUG
PANEL M MICROPHONE AMPLIFIER
CABLE SOCKET
CVBS
EXT AUDIO SOCKET
TDA1002A
MICR.
4M1
2M2
REM CONTR.
LED PANEL
+12.8V +5V −5V
PANEL C DC/DC CONVERTER
5.5kV
HORIZONTAL OUTPUT
PROTECTION CIRCUIT
HOR. DEFL.
−80V
+580V
−40V
+300V
+10V
+12.8V
+2.5V
−2.5V
+32V
−6.3V
PANEL N VIEWFINDER
VERTICAL OUTPUT
VERT DEFL
HOR. DEFL
40CB4
HT
5.5kV
TARGET
VIDICON R
VIDICON G
VIDICON B
PANEL E PRE AMPL R
PANEL E PRE AMPL. G
PANEL E PRE AMPL B
TDA2810
SENSITIVITY
+6dB
PANEL K DARK CURRENT
DARK CURRENT LIMITER
PANEL F VIDEO PROCESSOR 1
TDA1500
GAIN
BLACK LEVEL CLAMP
BLACK CLIPPER + BLANKING
BLACK LEVEL
CONTOUR CORRECTION
Reg. sw
PANEL G VIDEO PROCESSOR 2
TDA1501
TDA1051
GAMMA TRACKING
GAMMA CORRECTOR
BLANKING + CLIPPER
GAMMA
V contour
PANEL H PAL ENCODER
4.43MHz
PAL SWITCH
90° SHIFT CIRCUIT
R−Y MODULATOR
B−Y MODULATOR
MATRIX
IRIS CONTROL
DIAPHRAGM
BACKLIGHT COMPENSATION
18216 F8

Fig. II-1

Wiring Diagram Camera

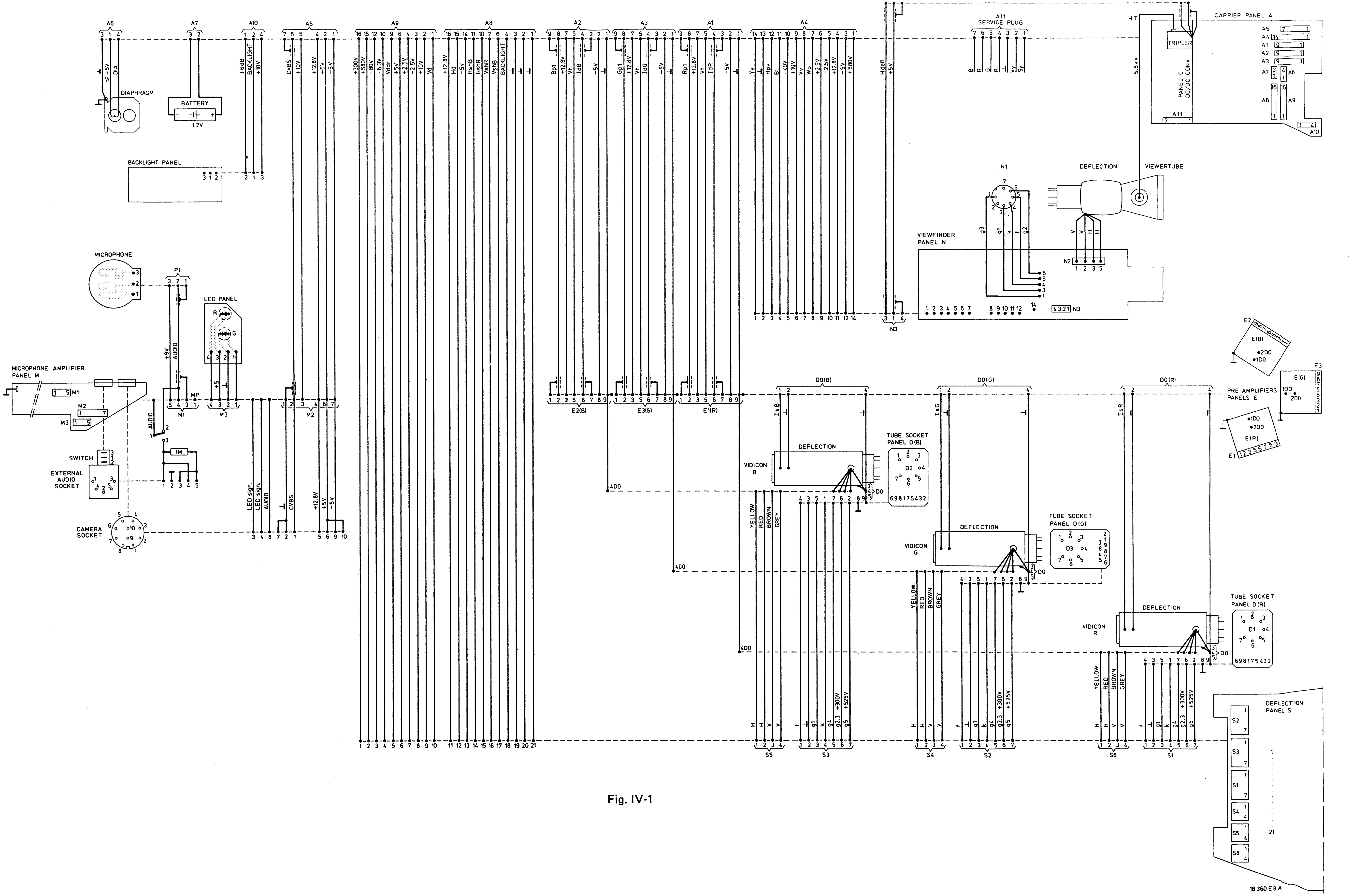

A6
A7
A10
A5
A9
A8
A2
A3
A1
A4
Hdefl.
A11
SERVICE PLUG
CARRIER PANEL A
TRIPLER
HT
5.5kV
PANEL C
DC/DC CONV
DIAPHRAGM
BATTERY
1.2V
BACKLIGHT PANEL
+6dB
BACKLIGHT
+10V
CVBS
+12.8V
+5V
-5V
+300V
+580V
-80V
-6.3V
Vddr
+2.5V
-2.5V
Vd
Hd
HshB
HshR
VshR
VshB
Bp1
Vl
IdB
Gp1
IdG
Rp1
IdR
Yv
Hpv
Bl
-40V
Vv
Wp
N1
DEFLECTION
VIEWERTUBE
VIEWFINDER
PANEL N
N2
N3
MICROPHONE
P1
LED PANEL
+9V
AUDIO
MICROPHONE AMPLIFIER
PANEL M
M1
M2
M3
MP
SWITCH
EXTERNAL
AUDIO
SOCKET
1M
CAMERA
SOCKET
LED sign.
E2(B)
E3(G)
E1(R)
E2
E(B)
E3
E(G)
E(R)
E1
PRE AMPLIFIERS
PANELS E
1DO
2DO
4DO
DO(B)
DO(G)
DO(R)
IsB
IsG
IsR
VIDICON
B
VIDICON
G
VIDICON
R
TUBE SOCKET
PANEL D(B)
TUBE SOCKET
PANEL D(G)
TUBE SOCKET
PANEL D(R)
D1
D2
D3
698175432
YELLOW
RED
BROWN
GREY
+525V
g1
g2,3
g4
g5
S1
S2
S3
S4
S5
S6
DEFLECTION
PANEL S
18 360 E 8 A

Fig. IV-1

Interconnections between panels and connectors camera

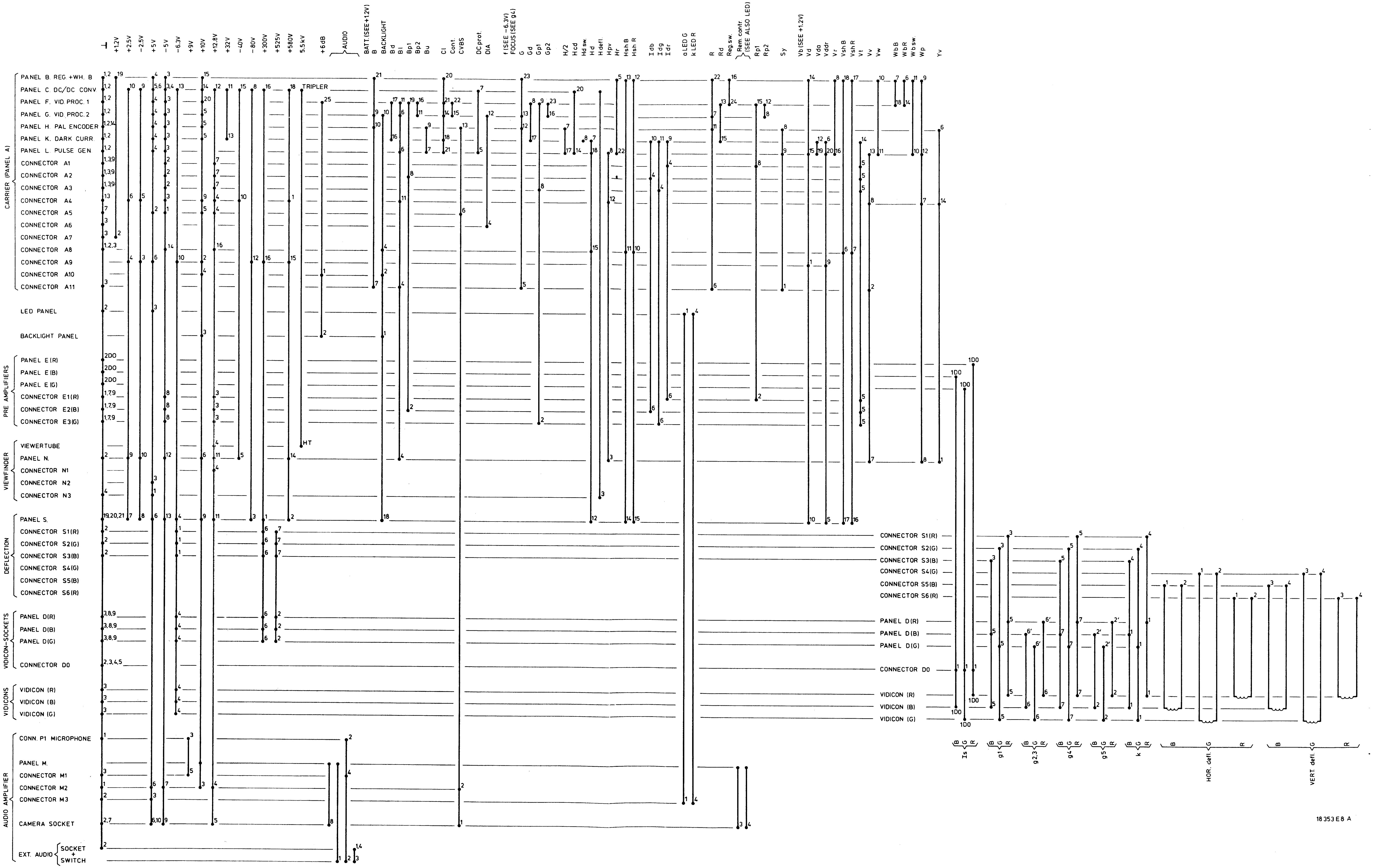

+1.2V
+2.5V
−2.5V
+5V
−5V
−6.3V
+9V
+10V
+12.8V
+32V
−40V
−80V
+300V
+525V
+580V
5.5kV
+6dB
AUDIO
BATT.(SEE +1.2V)
B
BACKLIGHT
Bd
Bl
Bp1
Bp2
Bu
Cl
Cont.
CVBS
DC prot.
DIA
f (SEE −6.3V)
FOCUS (SEE g4)
G
Gd
Gp1
Gp2
H/2
Hcd
Hd sw.
Hd
Hdefl.
Hpv
Hr
Hsh B
Hsh R
Idb
Idg
Idr
a LED G
k LED R
R
Rd
Reg.sw.
Rem. contr. (SEE ALSO LED)
Rp1
Rp2
Sy
Vb (SEE +1.2V)
Vd
Vda
Vddr
Vr
Vsh B
Vsh R
Vt
Vv
Vw
WbB
WbR
Wbsw.
Wp
Yv
CARRIER (PANEL A)
PANEL B. REG.+WH. B
PANEL C. DC/DC CONV.
PANEL F. VID. PROC. 1
PANEL G. VID. PROC. 2
PANEL H. PAL ENCODER
PANEL K. DARK CURR.
PANEL L. PULSE GEN.
CONNECTOR A1
CONNECTOR A2
CONNECTOR A3
CONNECTOR A4
CONNECTOR A5
CONNECTOR A6
CONNECTOR A7
CONNECTOR A8
CONNECTOR A9
CONNECTOR A10
CONNECTOR A11
LED PANEL
BACKLIGHT PANEL
PRE AMPLIFIERS
PANEL E (R)
PANEL E (B)
PANEL E (G)
CONNECTOR E1 (R)
CONNECTOR E2 (B)
CONNECTOR E3 (G)
VIEWFINDER
VIEWERTUBE
PANEL N.
CONNECTOR N1
CONNECTOR N2
CONNECTOR N3
DEFLECTION
PANEL S.
CONNECTOR S1 (R)
CONNECTOR S2 (G)
CONNECTOR S3 (B)
CONNECTOR S4 (G)
CONNECTOR S5 (B)
CONNECTOR S6 (R)
VIDICON-SOCKETS
PANEL D (R)
PANEL D (B)
PANEL D (G)
CONNECTOR D0
VIDICONS
VIDICON (R)
VIDICON (B)
VIDICON (G)
AUDIO AMPLIFIER
CONN. P1 MICROPHONE
PANEL M.
CONNECTOR M1
CONNECTOR M2
CONNECTOR M3
CAMERA SOCKET
EXT. AUDIO
SOCKET + SWITCH
TRIPLER
HT
Is
g1
g2,3
g4
g5
k
HOR. defl.
VERT. defl.
B
G
R
1D0
18 353 E8 A

Fig. IV-2

Printed board A: Carrier

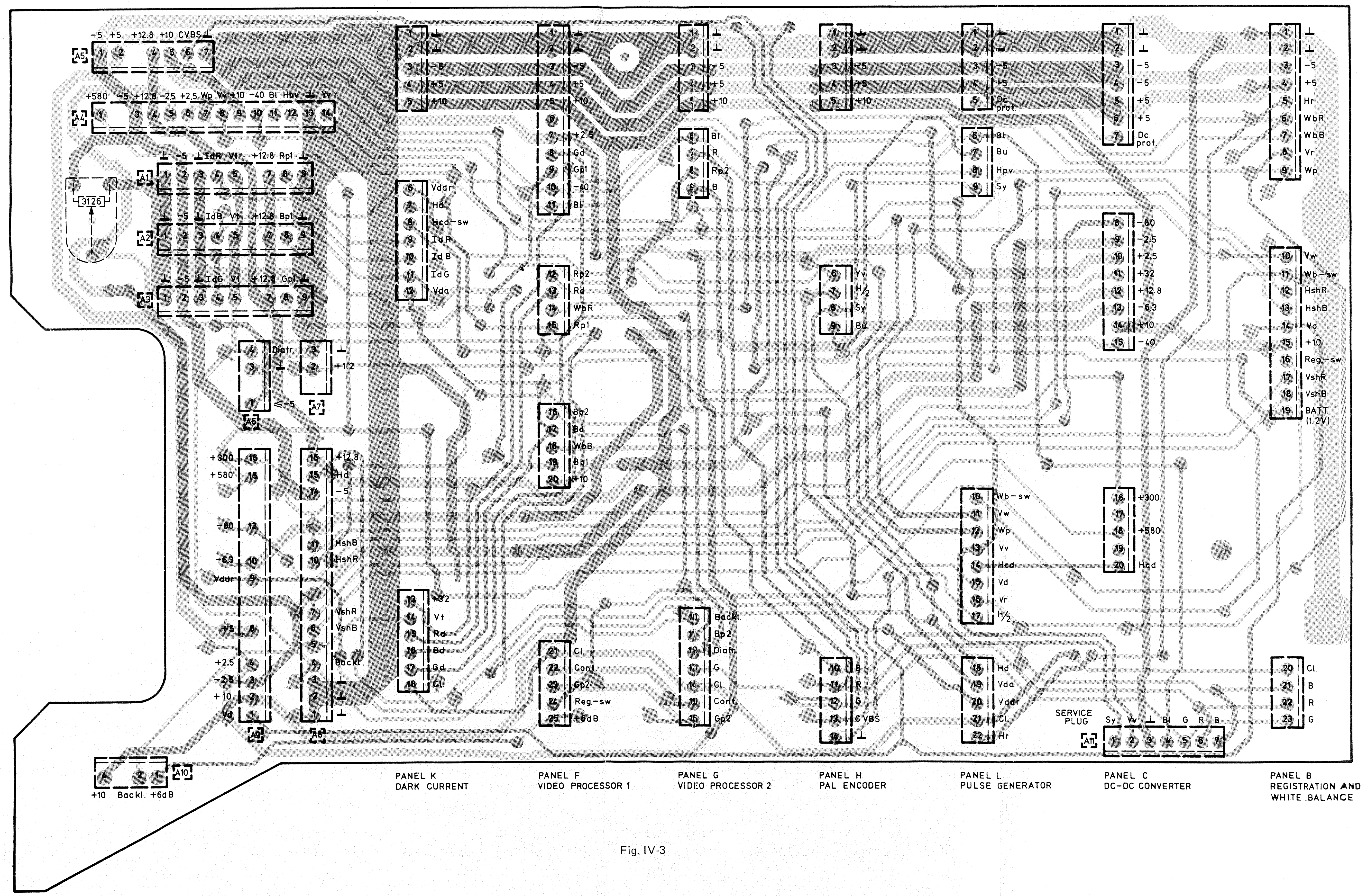

A5 -5 +5 +12.8 +10 CVBS ⊥ 1 2 4 5 6 7
A4 +580 -5 +12.8 -25 +2.5 Wp Vv +10 -40 Bl Hpv ⊥ Yv 1 3 4 5 6 7 8 9 10 11 12 13 14
A1 ⊥ -5 ⊥ IdR Vt +12.8 Rp1 ⊥ 1 2 3 4 5 7 8 9
A2 ⊥ -5 ⊥ IdB Vt +12.8 Bp1 ⊥ 1 2 3 4 5 7 8 9
A3 ⊥ -5 ⊥ IdG Vt +12.8 Gp1 ⊥ 1 2 3 4 5 7 8 9
3126
A6 4 3 1 Diafr. ⊥ ≤-5
A7 3 2 ⊥ +1.2
A9 +300 16 +580 15 -80 12 -6.3 10 Vddr 9 +5 6 +2.5 4 -2.5 3 +10 2 Vd 1
A8 16 +12.8 15 Hd 14 -5 11 HshB 10 HshR 7 VshR 6 VshB 5 4 Bckl. 3 ⊥ 2 ⊥ 1 ⊥
A10 4 2 1 +10 Backl. +6dB
PANEL K DARK CURRENT: 1 ⊥ 2 ⊥ 3 -5 4 +5 5 +10 6 Vddr 7 Hd 8 Hcd-sw 9 IdR 10 IdB 11 IdG 12 Vda 13 +32 14 Vt 15 Rd 16 Bd 17 Gd 18 Cl.
PANEL F VIDEO PROCESSOR 1: 1 ⊥ 2 ⊥ 3 -5 4 +5 5 +10 6 7 +2.5 8 Gd 9 Gp1 10 -40 11 Bl 12 Rp2 13 Rd 14 WbR 15 Rp1 16 Bp2 17 Bd 18 WbB 19 Bp1 20 +10 21 Cl. 22 Cont. 23 Gp2 24 Reg.-sw 25 +6dB
PANEL G VIDEO PROCESSOR 2: 1 ⊥ 2 ⊥ 3 -5 4 +5 5 +10 6 Bl 7 R 8 Rp2 9 B 10 Backl. 11 Bp2 12 Diafr. 13 G 14 Cl. 15 Cont. 16 Gp2
PANEL H PAL ENCODER: 1 ⊥ 2 ⊥ 3 -5 4 +5 5 +10 6 Yv 7 H/2 8 Sy 9 Bu 10 B 11 R 12 G 13 CVBS 14 ⊥
PANEL L PULSE GENERATOR: 1 ⊥ 2 ⊥ 3 -5 4 +5 5 Dc prot. 6 Bl 7 Bu 8 Hpv 9 Sy 10 Wb-sw 11 Vw 12 Wp 13 Vv 14 Hcd 15 Vd 16 Vr 17 H/2 18 Hd 19 Vda 20 Vddr 21 Cl. 22 Hr
PANEL C DC-DC CONVERTER: 1 ⊥ 2 ⊥ 3 -5 4 -5 5 +5 6 +5 7 Dc prot. 8 -80 9 -2.5 10 +2.5 11 +32 12 +12.8 13 -6.3 14 +10 15 -40 16 +300 17 18 +580 19 20 Hcd
PANEL B REGISTRATION AND WHITE BALANCE: 1 ⊥ 2 ⊥ 3 -5 4 +5 5 Hr 6 WbR 7 WbB 8 Vr 9 Wp 10 Vw 11 Wb-sw 12 HshR 13 HshB 14 Vd 15 +10 16 Reg.-sw 17 VshR 18 VshB 19 BATT. (1.2V) 20 Cl. 21 B 22 R 23 G
SERVICE PLUG A11 Sy Vv ⊥ Bl G R B 1 2 3 4 5 6 7

Fig. IV-3

18853E4

Circuit diagram B: Registration + White balance

2...	2411. 2412. 2414···2418 2419 2421···2423 2427. 2428. 2426. 2429 2443. 2439. 2436. 2438 2445. 2437. 2444 2441. 2440
3...	3411···3413. 3414···3417. 3425. 3418···3424. 3426 3435. 3432 3444. 3445. 3470. 3452···3455 3430. 3431 3491···3495. 3509
3...	3428. 3427 3429 3438. 3443 3475. 3477. 3462···3468. 3469 3490 3439···3442. 3501···3508. 3497···3500
6...	6411···6417 6420 6421 6432 6444. 6422. 6423. 6426. 6427 6434 6437. 6438. 6433. 6442. 6441. 6443. 6450. 6446···6449
MISC.	5411. 5412 S1 S2 5413···5415 S3

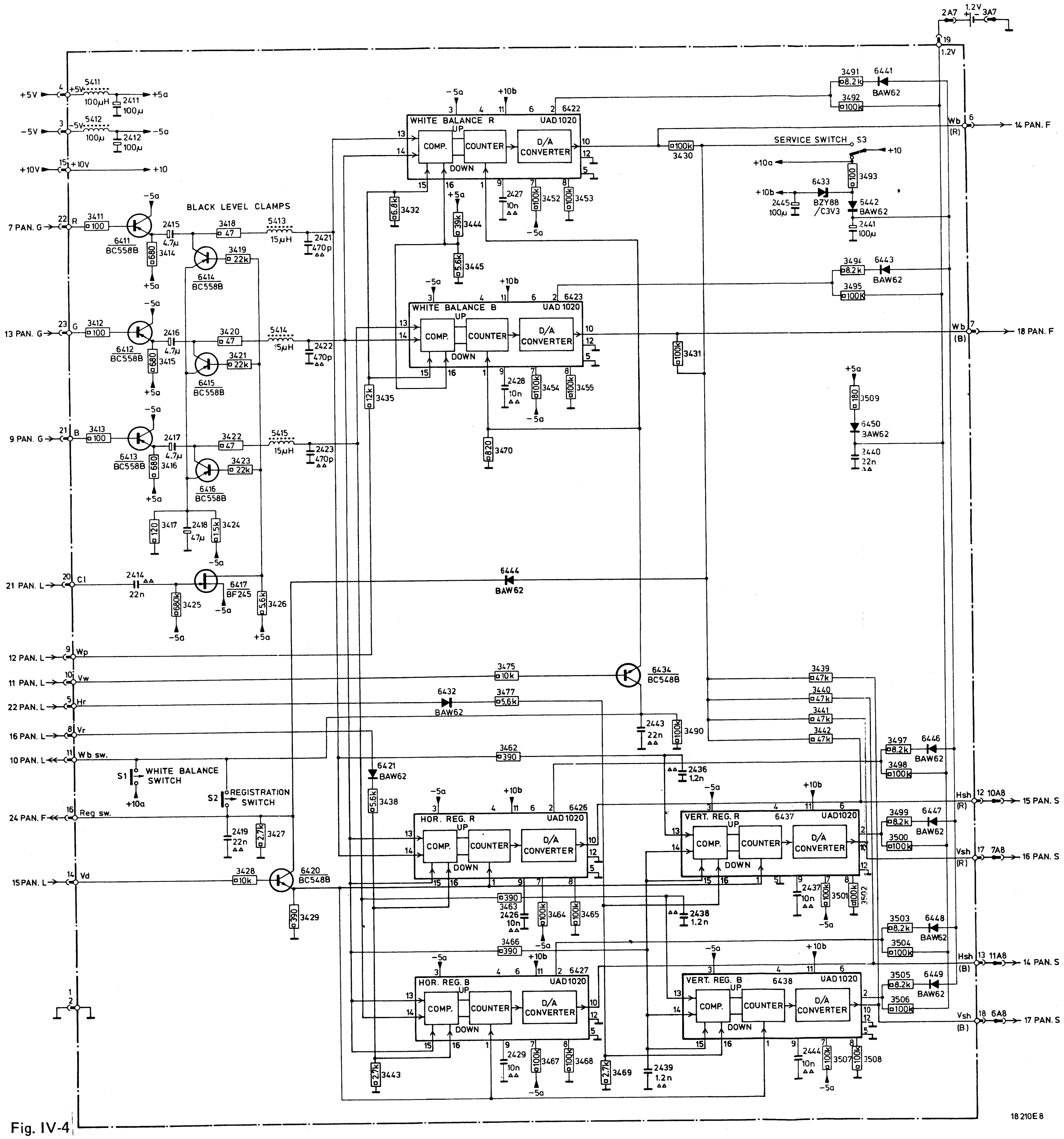

2A7
1.2V
3A7
19
1.2V
+5V
−5V
+10V
+5a
−5a
+10
BLACK LEVEL CLAMPS
7 PAN. G
13 PAN. G
9 PAN. G
21 PAN. L
12 PAN. L
11 PAN. L
22 PAN. L
16 PAN. L
10 PAN. L
24 PAN. F
15PAN. L
R
G
B
Cl
Wp
Vw
Hr
Vr
Wb sw.
Reg sw.
Vd
BC558B
BF245
BC548B
BAW62
BZY88 /C3V3
WHITE BALANCE R
WHITE BALANCE B
HOR. REG. R
HOR. REG. B
VERT. REG. R
VERT. REG. B
UAD1020
COMP.
COUNTER
D/A CONVERTER
UP
DOWN
SERVICE SWITCH S3
S1 WHITE BALANCE SWITCH
S2 REGISTRATION SWITCH
+10a
+10b
Wb (R)
Wb (B)
Hsh (R)
Vsh (R)
Hsh (B)
Vsh (B)
14 PAN. F
18 PAN. F
10A8
15 PAN. S
7A8
16 PAN. S
11A8
14 PAN. S
6A8
17 PAN. S
18 210E 8

Fig. IV-4
CS 68 747

Printed board B

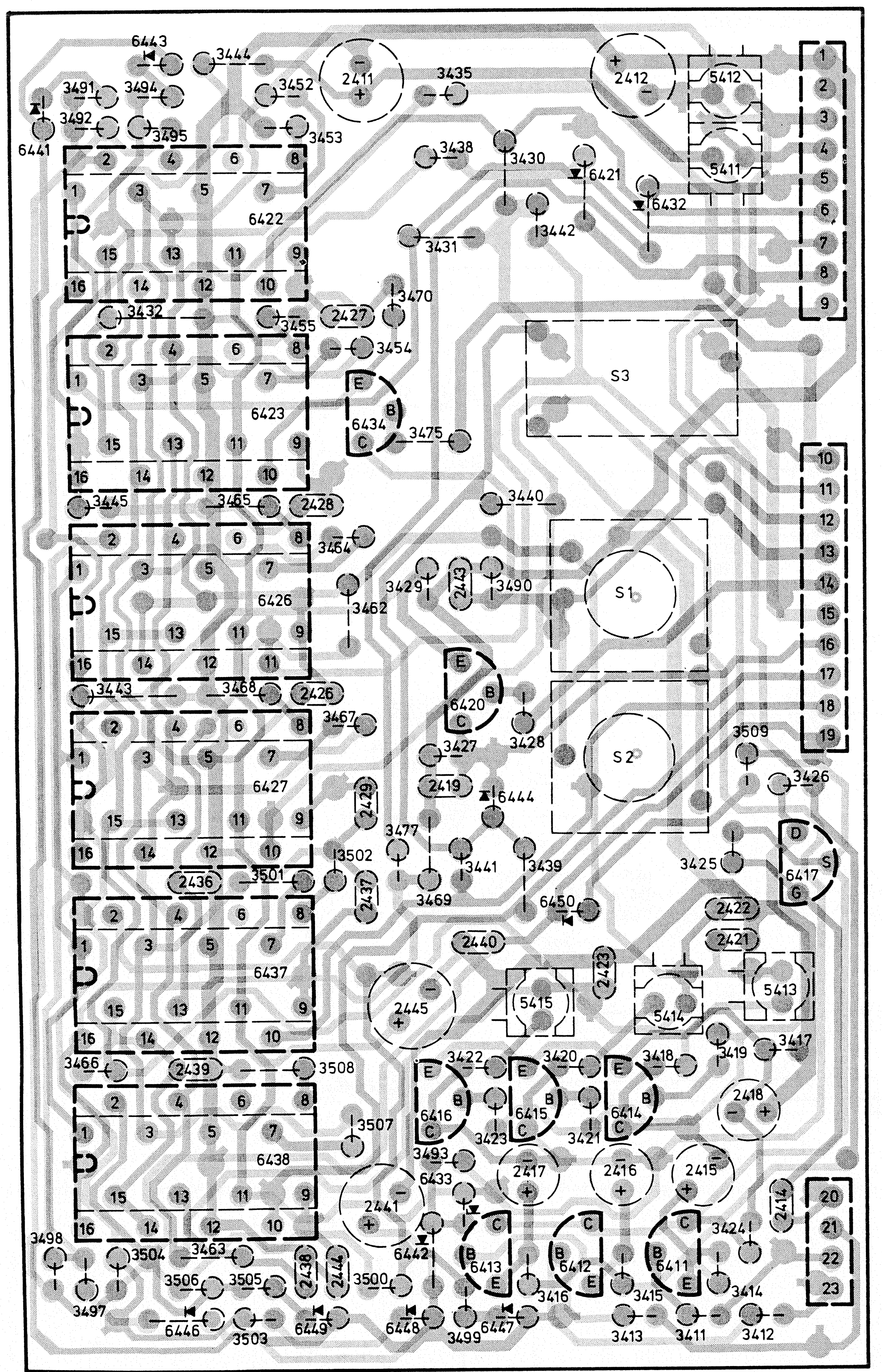
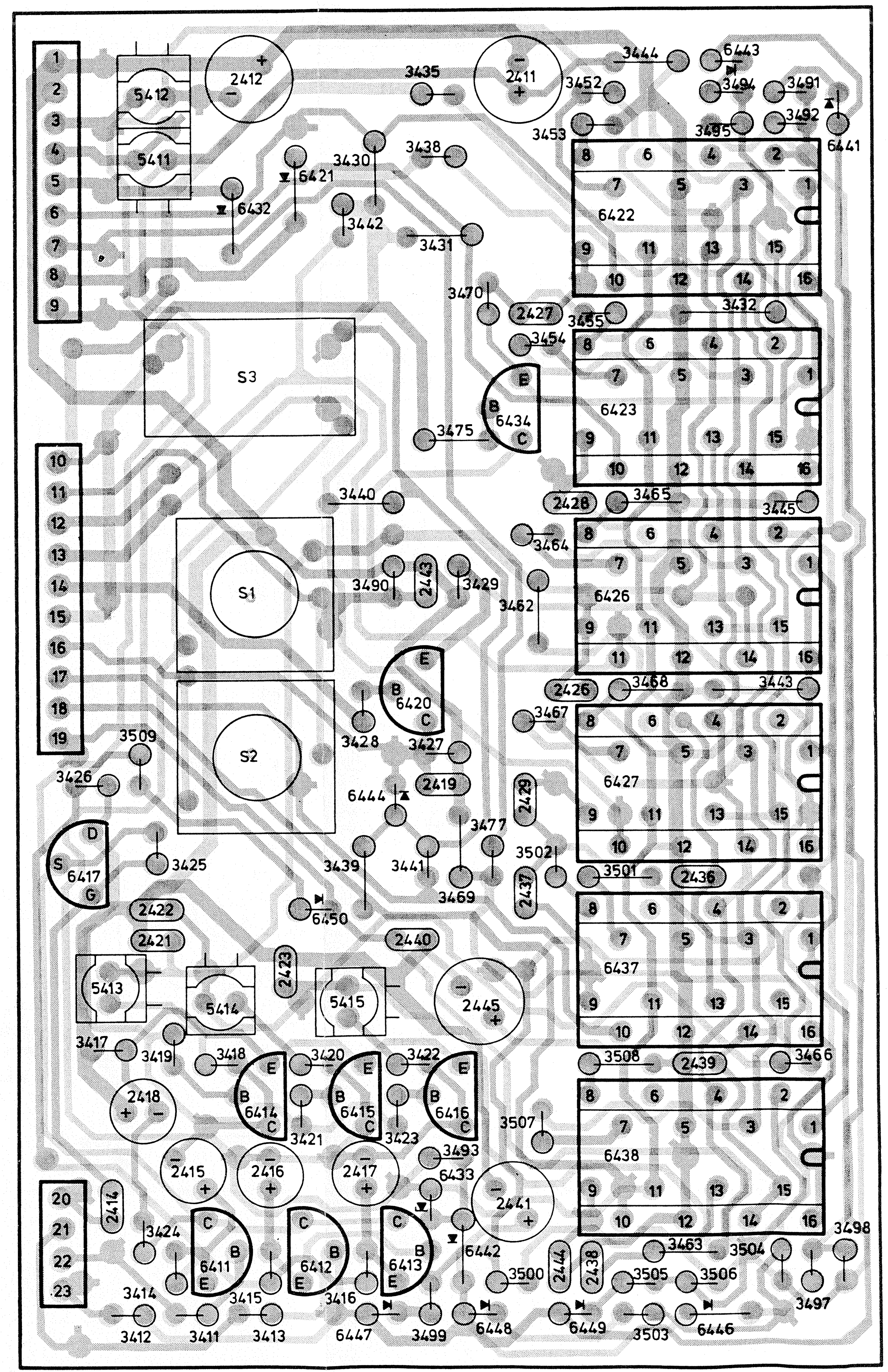

S1
S2
S3
6422
6423
6426
6427
6437
6438
5411
5412
5413
5414
5415
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

Fig. IV-5

2···	3···	3···	5···	6···	MISC.
2411 2412	3444 3491 3494	3435 3452	5412	6443	
	3492 3495	3453 3438 3430	5411	6441 6421 6432 6422	
		3442 3431			
2427	3470 3432 3455 3454				
	3475			6423 6434	S3
2428	3445 3465 3464	3440			
2443	3429 3462	3490		6426	S1
2426	3443 3468 3467 3427	3509 3428		6420	
2419 2429	3477	3426		6427 6444	S2
2436 2437 2422 2440 2421	3502 3501 3469	3441 3439 3425		6417 6450	
2423 2445			5413 5415 5414	6437	
2439 2418	3466 3508	3417 … 3420 3422		6416 6415 6414	
2417 2416 2415 2441 2414	3507 3423 3493	3421		6438 6433	
2438 2444	3498 3463 3504 3506 3505 3497 3503	3424 3500 3411 … 3416		6442 6413 6412 6411 6446 … 6449	

18867 E 4


S1
S2
S3
6422
6423
6426
6427
6437
6438
5411
5412
5413
5414
5415
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

18866 C4

Fig. IV-6

Circuit diagram C: DC-DC converter

2...	2806.2807. 2803. 2802 2801 2804 2809 2810···2813 2822 2814 2829 2823.2817···2820 2815
3...	3805···3807.3801.3802.3803 3811 3839 3804.3808.3810.3840 3816 3837
5...	5801 5802
6...	6809.6801···6803 6805.6808.6836.6804.6806.6807.6837.6813.6834 6814···6817 6829 6835.6826···6828.6833.6830.6831 6832

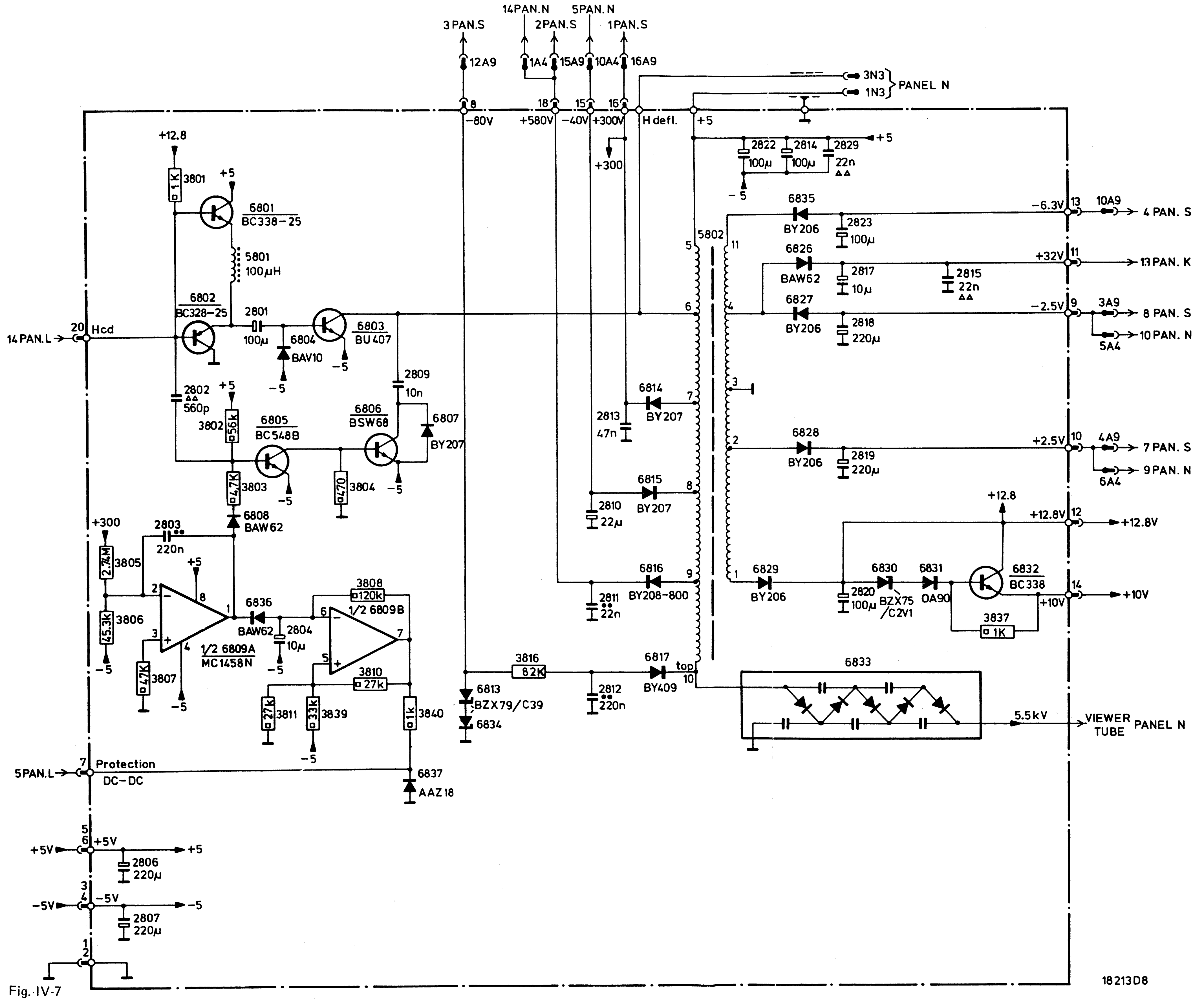

3 PAN.S
14PAN.N
2PAN.S
5PAN.N
1PAN.S
12A9
1A4
15A9
10A4
16A9
3N3
1N3
PANEL N
-80V
+580V
-40V
+300V
H defl.
+5
+300
+12.8
3801
1K
6801
BC338-25
5801
100μH
6802
BC328-25
2801
100μ
6803
BU407
6804
BAV10
14PAN.L
Hcd
2802
560p
3802
56k
6805
BC548B
6806
BSW68
2809
10n
6807
BY207
3803
4.7K
3804
470
6808
BAW62
+300
2803
220n
3805
2.74M
3806
45.3k
3807
4.7K
1/2 6809A
MC1458N
6836
BAW62
2804
10μ
3808
120k
1/2 6809B
3810
27k
3811
27k
3839
33k
3840
1k
5PAN.L
Protection
DC-DC
6837
AAZ18
+5V
2806
220μ
-5V
2807
220μ
2822
100μ
2814
100μ
2829
22n
5802
6835
BY206
2823
100μ
-6.3V
10A9
4 PAN. S
6826
BAW62
2817
10μ
2815
22n
+32V
13 PAN. K
6827
BY206
2818
220μ
-2.5V
3A9
8 PAN. S
10 PAN. N
5A4
6814
BY207
2813
47n
6828
BY206
2819
220μ
+2.5V
4A9
7 PAN. S
9 PAN. N
6A4
6815
BY207
2810
22μ
+12.8
+12.8V
6816
BY208-800
2811
22n
6829
BY206
2820
100μ
6830
BZX75
/C2V1
6831
OA90
6832
BC338
+10V
3837
1K
3816
82K
2812
220n
6817
BY409
top
6813
BZX79/C39
6834
6833
5.5kV
VIEWER
TUBE
PANEL N
18213D8

Fig. IV-7
CS 68 749

Printed board C

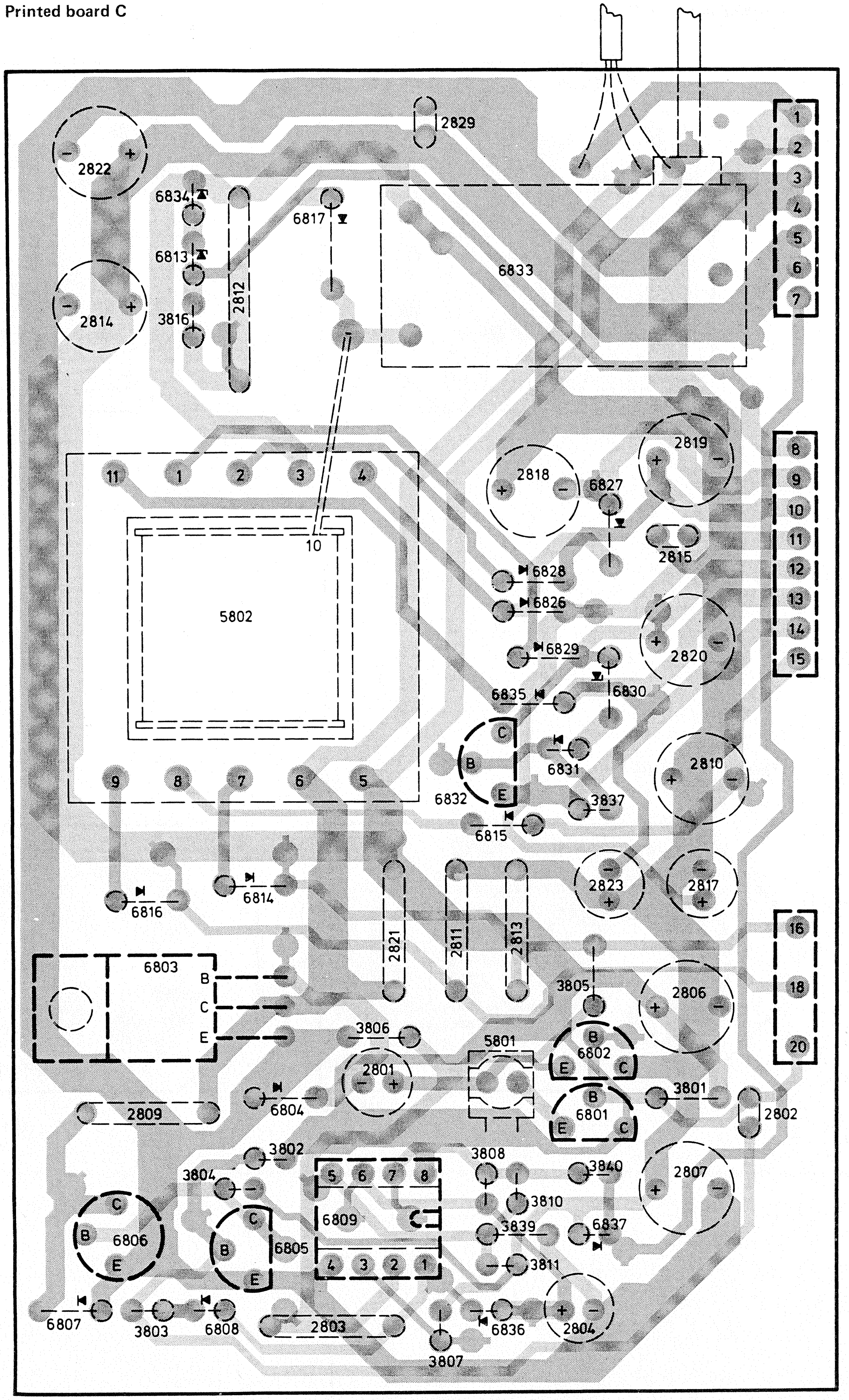

2829
2822
2814
6834
6813
3816
2812
6817
6833
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
18
20
5802
2819
2818
6827
2815
6828
6826
6829
2820
6830
6835
6831
6832
3837
6815
2810
6816
6814
2821
2811
2813
2823
2817
6803
B
C
E
3805
2806
3806
5801
6802
2801
6801
3801
2802
2809
6804
3802
3804
6809
6805
6806
3808
3840
3810
3839
6837
3811
2807
6807
3803
6808
2803
6836
2804
3807

Fig. IV-8

2···	3···	5···	6···
2829			
2822			
			6834
			6817
			6813
2812			6833
2814	3816		
2819			
2818			6827
2815			
			6828
			6826
		5802	
2820			6829
			6830
			6835
2810			6831
			6832
	3837		
			6815
2823			
2817			6814
			6816
2821			
2811			
2813			6803
2806	3805		
	3806		
		5801	6802
2801			
2809	3801		6804
2802			6801
	3802		
	3808		
2807	3840		
	3804		
	3810		6809
	3839		6806
			6837
	3811		6805
2803			6807
2804	3803		6808
			6836
	3807		

18861C4

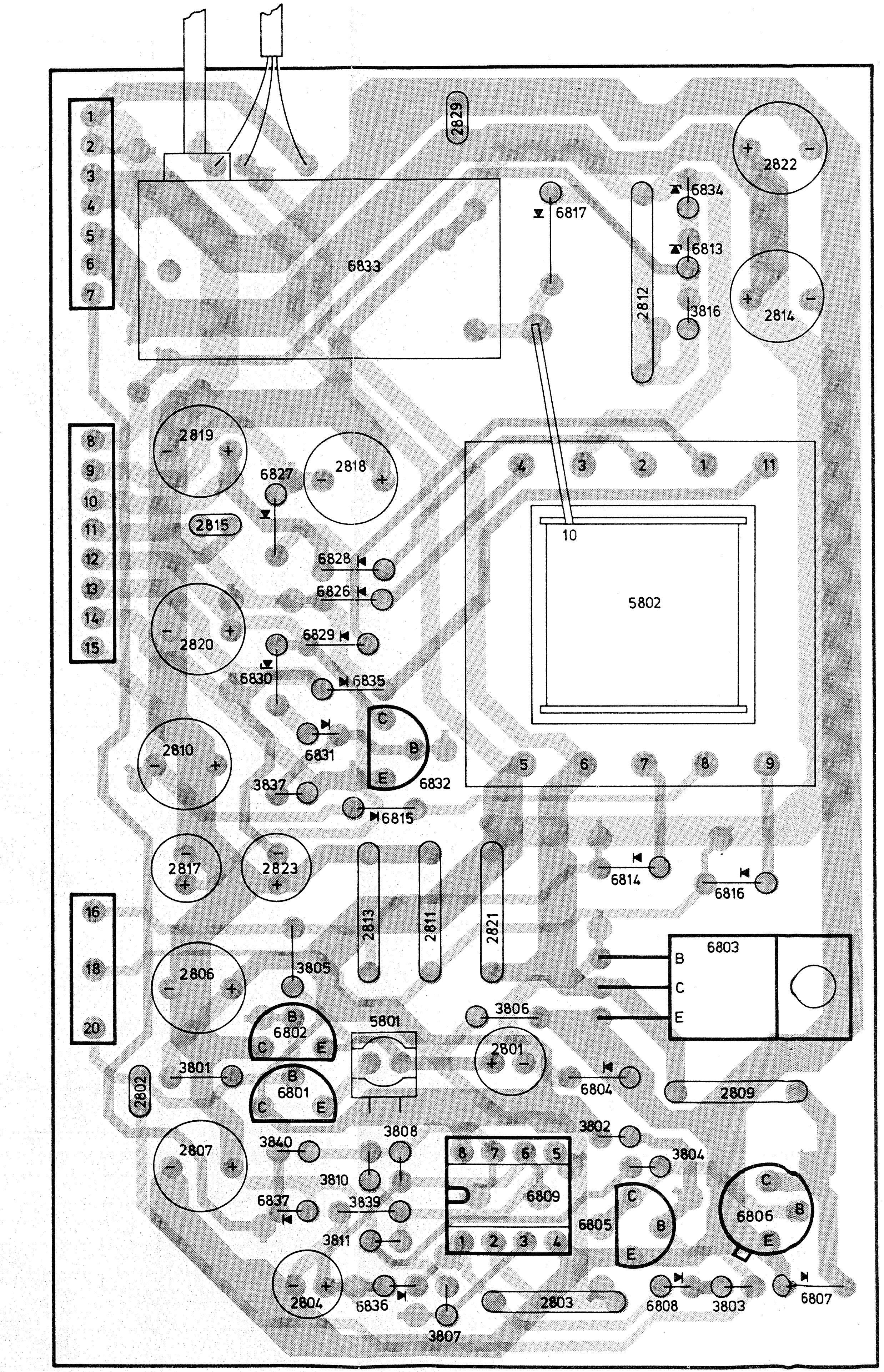

1
2
3
4
5
6
7
2829
6833
6817
6834
6813
2812
3816
2822
2814
8
9
10
11
12
13
14
15
16
18
20
2819
6827
2818
2815
5802
6828
6826
6829
2820
6830
6835
6831
2810
3837
6832
6815
2817
2823
2813
2811
2821
6814
6816
6803
B
C
E
2806
3805
6802
3806
5801
2801
3801
6801
2802
6804
2809
2807
3840
3808
3810
6837
3839
3811
6809
3802
3804
6805
6806
2804
6836
3807
2803
6808
3803
6807

Fig. IV-9

Circuit diagram D:
Tube sockets +
Vidicons (R,G,B)

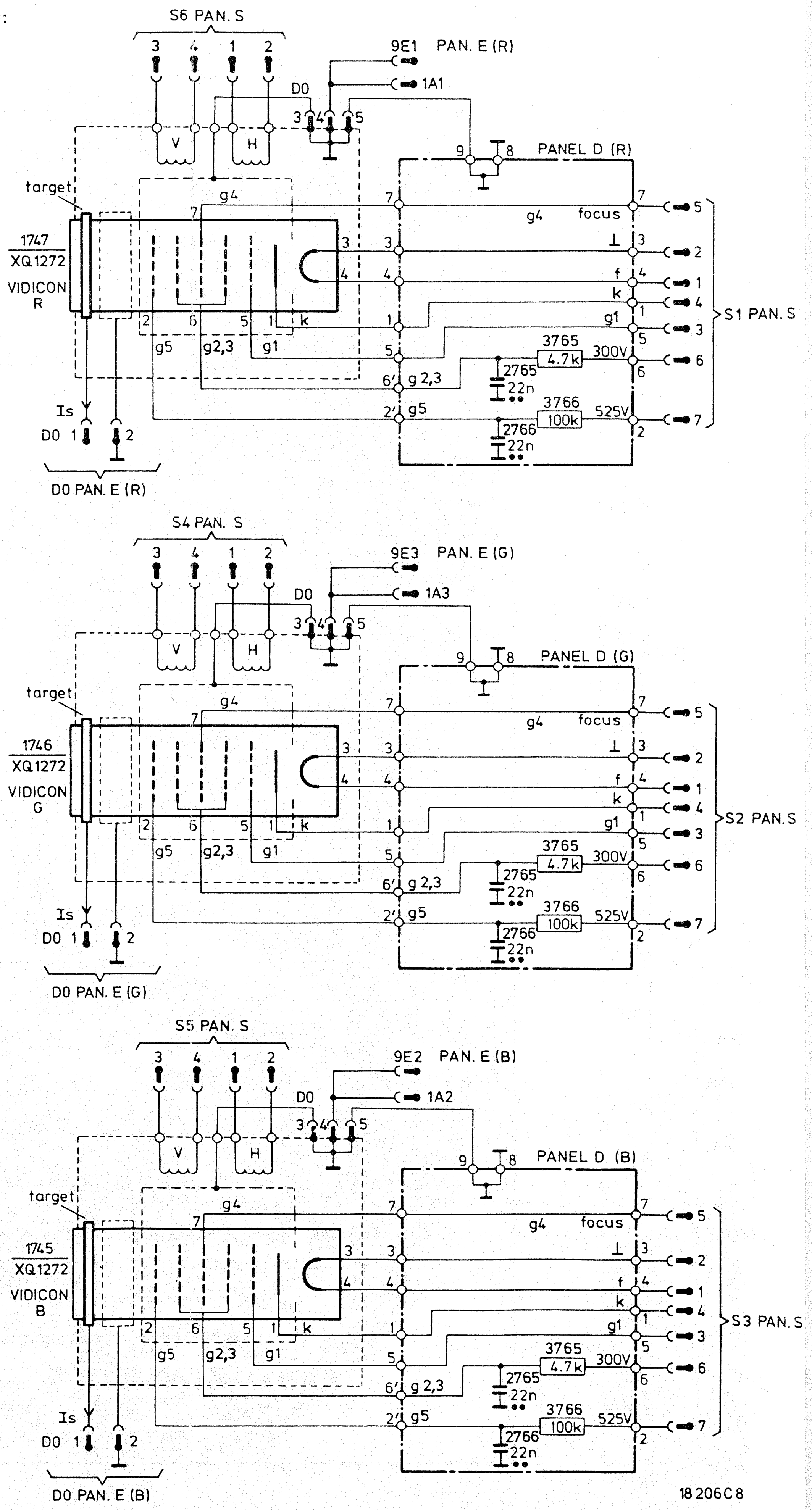

S6 PAN. S
3 4 1 2
9E1 PAN. E (R)
1A1
D0
3 4 5
V
H
9 8 PANEL D (R)
target
g4
7
1747
XQ1272
VIDICON
R
focus
⊥
f
k
g1
3 4 2 6 5 1 k
g5 g2,3 g1
3765
4.7k
300V
2765
22n
g 2,3
3766
100k
525V
2766
22n
g5
5 2 1 4 3 6 7
S1 PAN. S
Is
D0 1 2
D0 PAN. E (R)
S4 PAN. S
9E3 PAN. E (G)
1A3
PANEL D (G)
1746
XQ1272
VIDICON
G
S2 PAN. S
D0 PAN. E (G)
S5 PAN. S
9E2 PAN. E (B)
1A2
PANEL D (B)
1745
XQ1272
VIDICON
B
S3 PAN. S
D0 PAN. E (B)
18206C8

Fig. IV-10
CS 68 751

Printed board D (R,B)

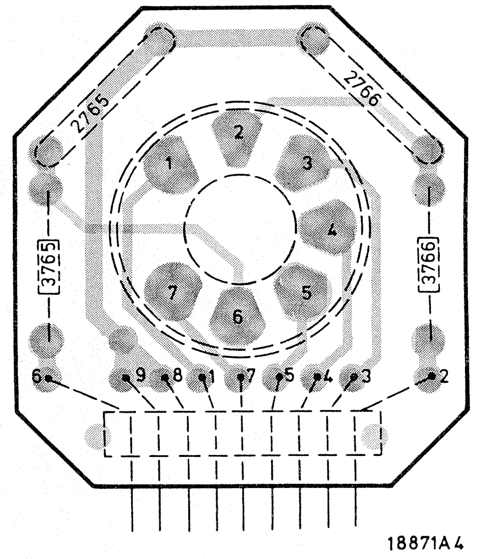

2765
2766
3765
3766
1 2 3 4 5 6 7
6 9 8 1 7 5 4 3 2
18871A4

Fig. IV-11

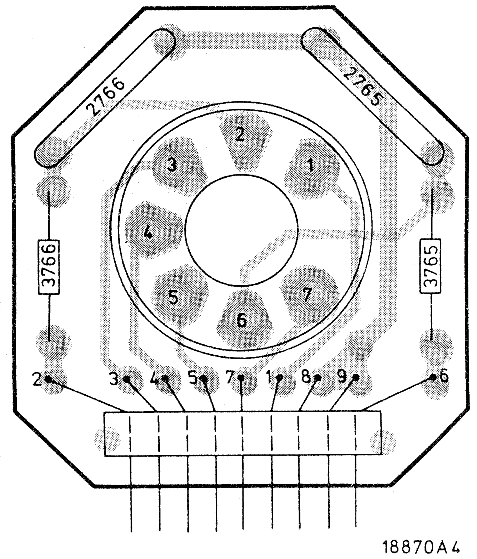

2766
2765
3766
3765
1 2 3 4 5 6 7
2 3 4 5 7 1 8 9 6
18870A4

Fig. IV-12

Printed board D(G)

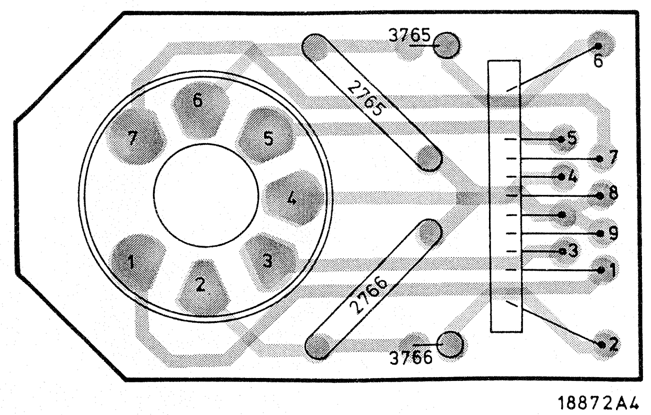

3765
2765
2766
3766
1 2 3 4 5 6 7
6 5 7 4 8 9 3 1 2
18872A4

Fig. IV-13

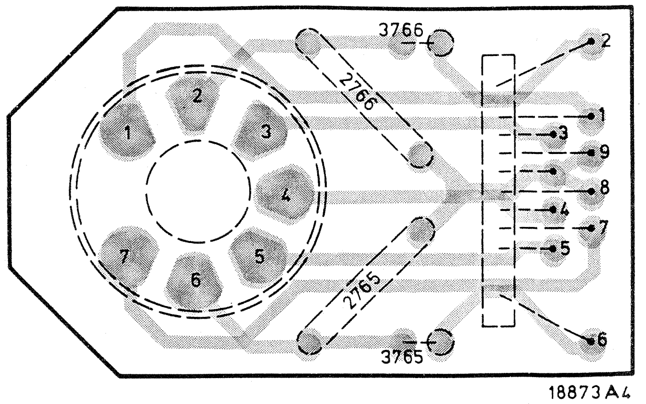

3766
2766
2765
3765
1 2 3 4 5 6 7
2 1 3 9 8 4 7 5 6
18873A4

Fig. IV-14

Circuit diagram E: Pre-amplifiers (R,G,B)

2...	2779.2780.2778	2775	2774	2773	2781		2777.2771.2776.2772
3...	3777.3778.3779	3776		3773	3775.3772.3771	3780	
MISC.	6771		6772	5771			

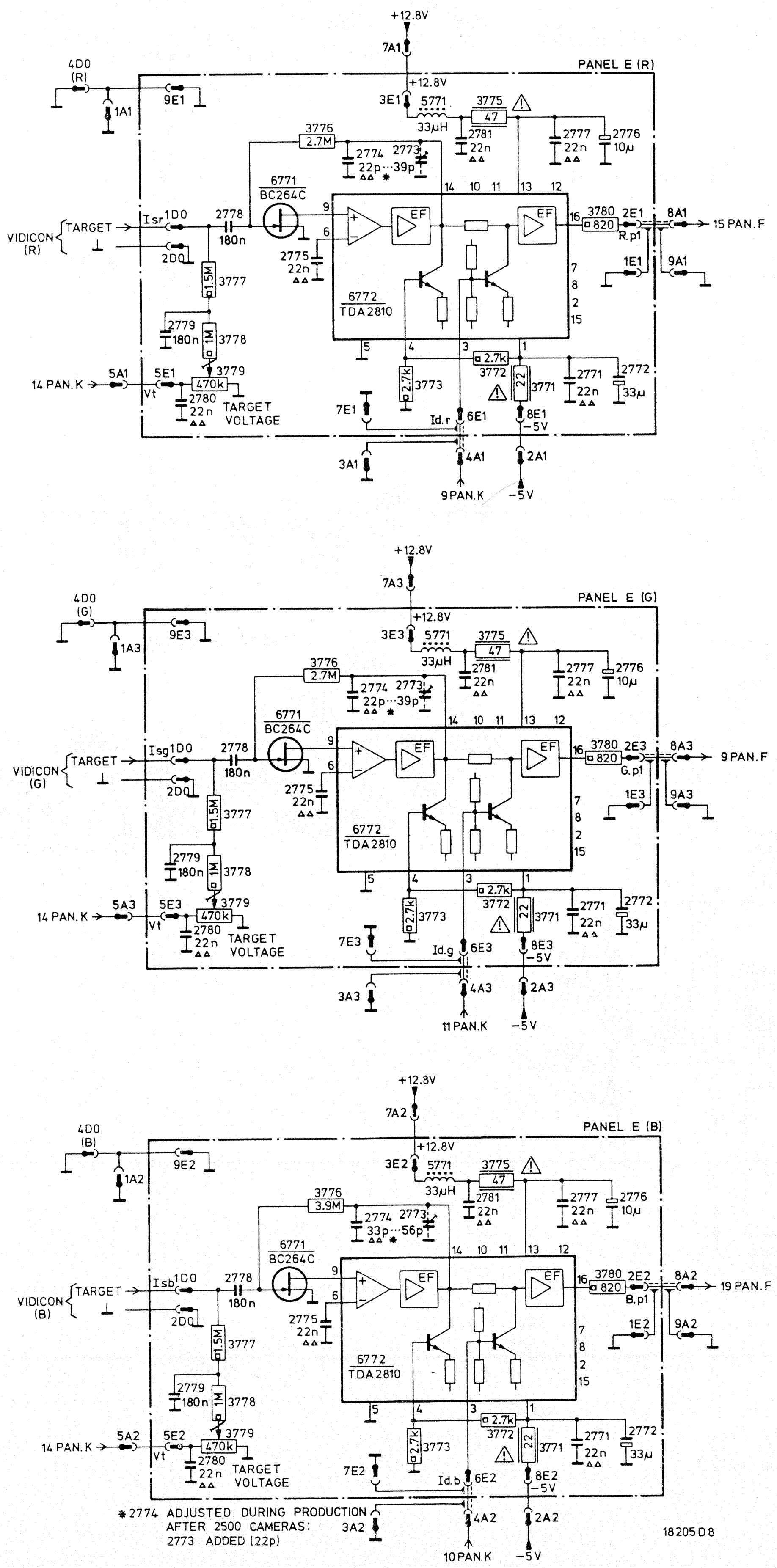
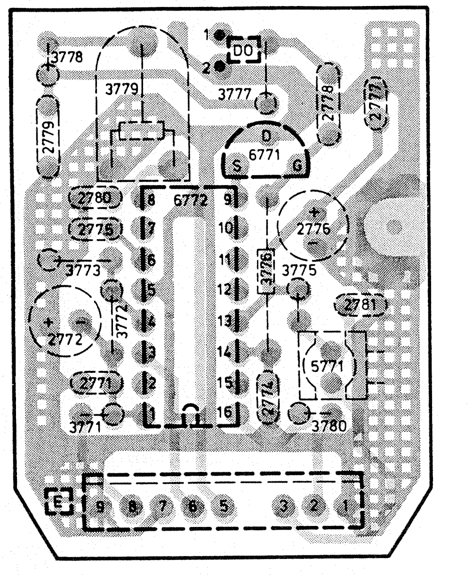

+12.8V
7A1
4D0 (R)
PANEL E (R)
9E1
1A1
3E1
5771
33μH
3775
47
2781 22n
2777 22n
2776 10μ
3776 2.7M
2774 22p
2773 ...39p
6771 BC264C
VIDICON (R)
TARGET
Isr 1D0
2D0
2778 180n
2775 22n
6772 TDA2810
EF
3780 820
2E1
R.p1
8A1
15 PAN.F
1E1
9A1
3777 1.5M
2779 180n
3778 1M
3779 470k
14 PAN.K
5A1
5E1
Vt
2780 22n
TARGET VOLTAGE
7E1
3773 2.7k
3772 2.7k
3771 22
2771 22n
2772 33μ
Id.r
6E1
8E1
-5V
3A1
4A1
2A1
9 PAN.K
-5V
4D0 (G)
PANEL E (G)
7A3
9E3
1A3
3E3
Isg 1D0
VIDICON (G)
G.p1
2E3
8A3
9 PAN.F
1E3
9A3
5A3
5E3
7E3
Id.g
6E3
8E3
3A3
4A3
2A3
11 PAN.K
4D0 (B)
PANEL E (B)
7A2
9E2
1A2
3E2
3776 3.9M
2774 33p
2773 ...56p
Isb 1D0
VIDICON (B)
B.p1
2E2
8A2
19 PAN.F
1E2
9A2
5A2
5E2
7E2
Id.b
6E2
8E2
3A2
4A2
2A2
10 PAN.K
*2774 ADJUSTED DURING PRODUCTION AFTER 2500 CAMERAS: 2773 ADDED (22p)
18205D8

Fig. IV-15

Printed board E


3778
3779
3777
D0
1
2
6771
D
S
G
2778
2777
2779
2780
2775
3773
6772
3772
2772
2771
3771
2776
3776
3775
2781
5771
2774
3780
E
9 8 7 6 5 3 2 1

2...	3...	5...	6...
	3778		
	3779		
2777	3777		
2778			
2779			6771
2780			6772
2775			
2776	3776		
	3773		
	3775		
2781	3772		
2772			
2771		5771	
2774	3771		
	3780		

18875 B

Fig. IV-16

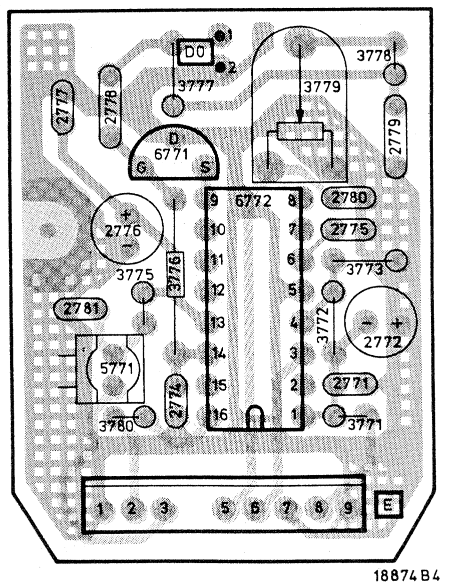

D0
1
2
3777
3779
3778
2777
2778
2779
6771
D
G
S
6772
2776
3775
3776
2780
2775
3773
2781
3772
2772
5771
2774
3780
2771
3771
E
1 2 3 5 6 7 8 9
18874B4

Fig. IV-17

Printed board backlight panel

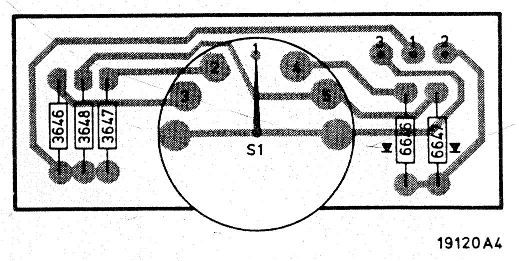

3646
3648
3647
S1
6646
6647
1
2
3
4
5
19120A4

Fig. IV-18

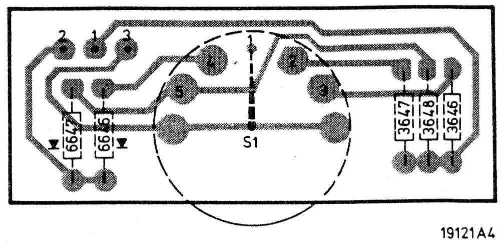
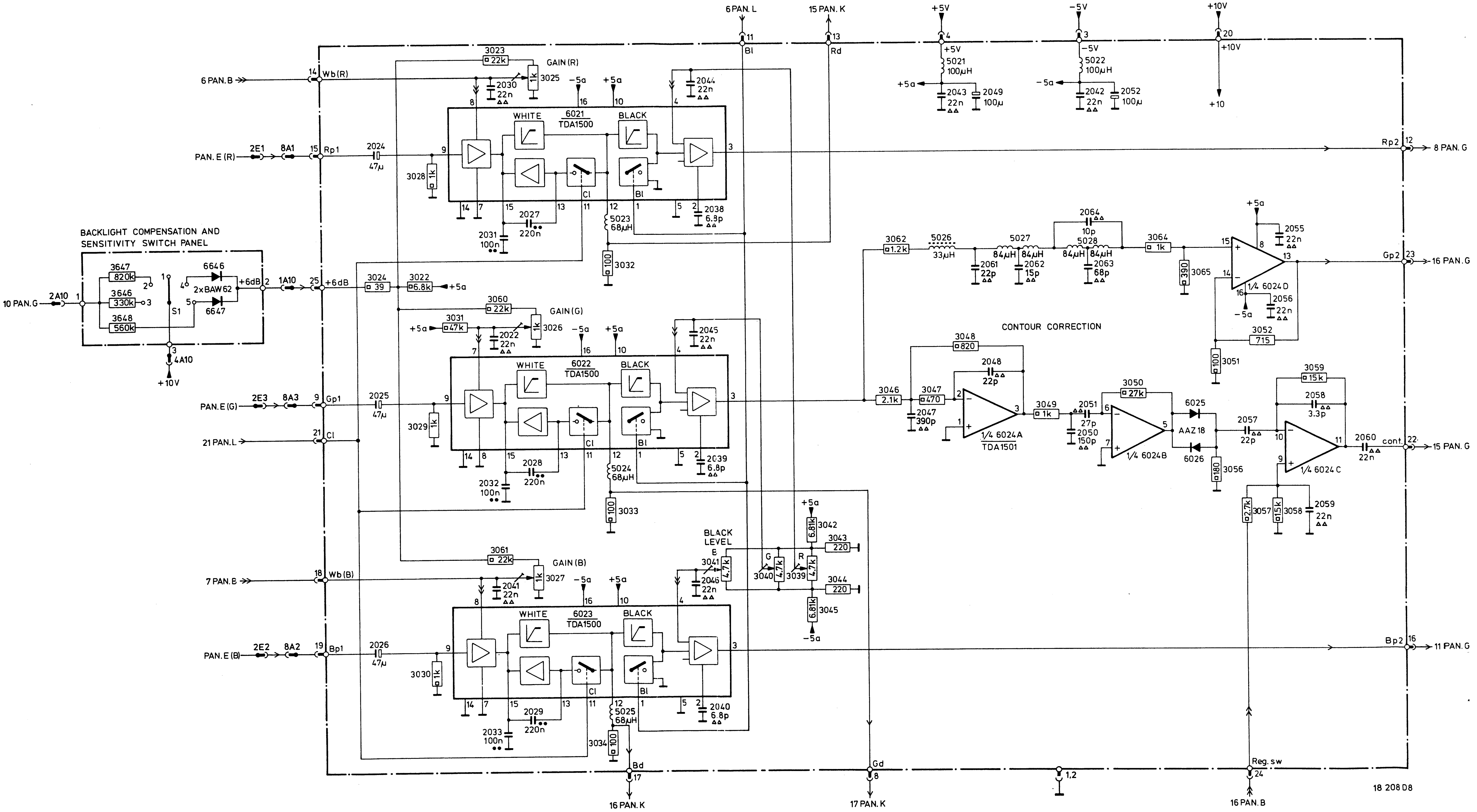

6647
6646
S1
3647
3648
3646
1
2
3
4
5
19121A4

Fig. IV-19

Circuit diagram F: Video processor 1 + Sensitivity switch

2...	2024.2025 2031.2030.2022.2027 2044.2038.2045 2043 2049.2061 2062 2042.2064.2063.2052 2056.2055
2...	2026 2032.2041.2033.2028.2029 2046.2039.2040 2047 2048 2050.2051 2057 2058.2059 2060
3...	3646···3648 3024 3028.3022.3031 3023.3060 3025.3026 3032 3062 3048 3064.3065 3051 3052
3...	3029.3030 3061 3027 3034.3033 3041 3040 3039 3042···3045 3046 3047 3049 3050 3056 3057 3058 3059
5...	5023.5024.5025 5026 5021 5027 5022.5028
6...	6646.6647 6021···6023 6024 6025.6026



6 PAN. L
15 PAN. K
+5V
−5V
+10V
BACKLIGHT COMPENSATION AND SENSITIVITY SWITCH PANEL
10 PAN. G
2A10
3647 820k
3646 330k
3648 560k
6646
6647
2xBAW62
S1
+6dB
1A10
4A10
+10V
6 PAN. B
Wb(R)
PAN. E (R)
2E1
8A1
Rp1
2024 47μ
3028 1k
3023 22k
GAIN (R)
3025 1k
2030 22n
WHITE
BLACK
6021 TDA1500
2044 22n
2027 220n
2031 100n
2038 6.8p
5023 68μH
3032 100
Cl
Bl
3024 39
3022 6.8k
+5a
−5a
3060 22k
GAIN (G)
3031 47k
2022 22n
3026 1k
2045 22n
6022 TDA1500
PAN. E (G)
2E3
8A3
Gp1
2025 47μ
3029 1k
21 PAN. L
2028 220n
2032 100n
2039 6.8p
5024 68μH
3033 100
BLACK LEVEL
3041 4.7k
3040 4.7k
3039 4.7k
3042 6.81k
3043 220
3044 220
3045 6.81k
2046 22n
3061 22k
GAIN (B)
3027 1k
2041 22n
6023 TDA1500
7 PAN. B
Wb (B)
PAN. E (B)
2E2
8A2
Bp1
2026 47μ
3030 1k
2029 220n
2033 100n
2040 6.8p
5025 68μH
3034 100
Bd
16 PAN. K
Gd
17 PAN. K
Reg. sw
16 PAN. B
5021 100μH
2043 22n
2049 100μ
5022 100μH
2042 22n
2052 100μ
+10
3062 1.2k
5026 33μH
5027 84μH 84μH
5028 84μH 84μH
2064 10p
2061 22p
2062 15p
2063 68p
3064 1k
3065 390
1/4 6024 D
2055 22n
2056 22n
3052 715
3051 100
CONTOUR CORRECTION
3048 820
2048 22p
3046 2.1k
3047 470
2047 390p
1/4 6024A TDA1501
3049 1k
2051 27p
2050 150p
3050 27k
1/4 6024B
6025
6026
AAZ18
3056 180
2057 22p
3059 15k
2058 3.3p
1/4 6024 C
2060 22n
cont.
3057 2.7k
3058 15k
2059 22n
Rp2
8 PAN. G
Gp2
16 PAN. G
15 PAN. G
Bp2
11 PAN. G
18 208 08

Fig. IV-20

Printed board F

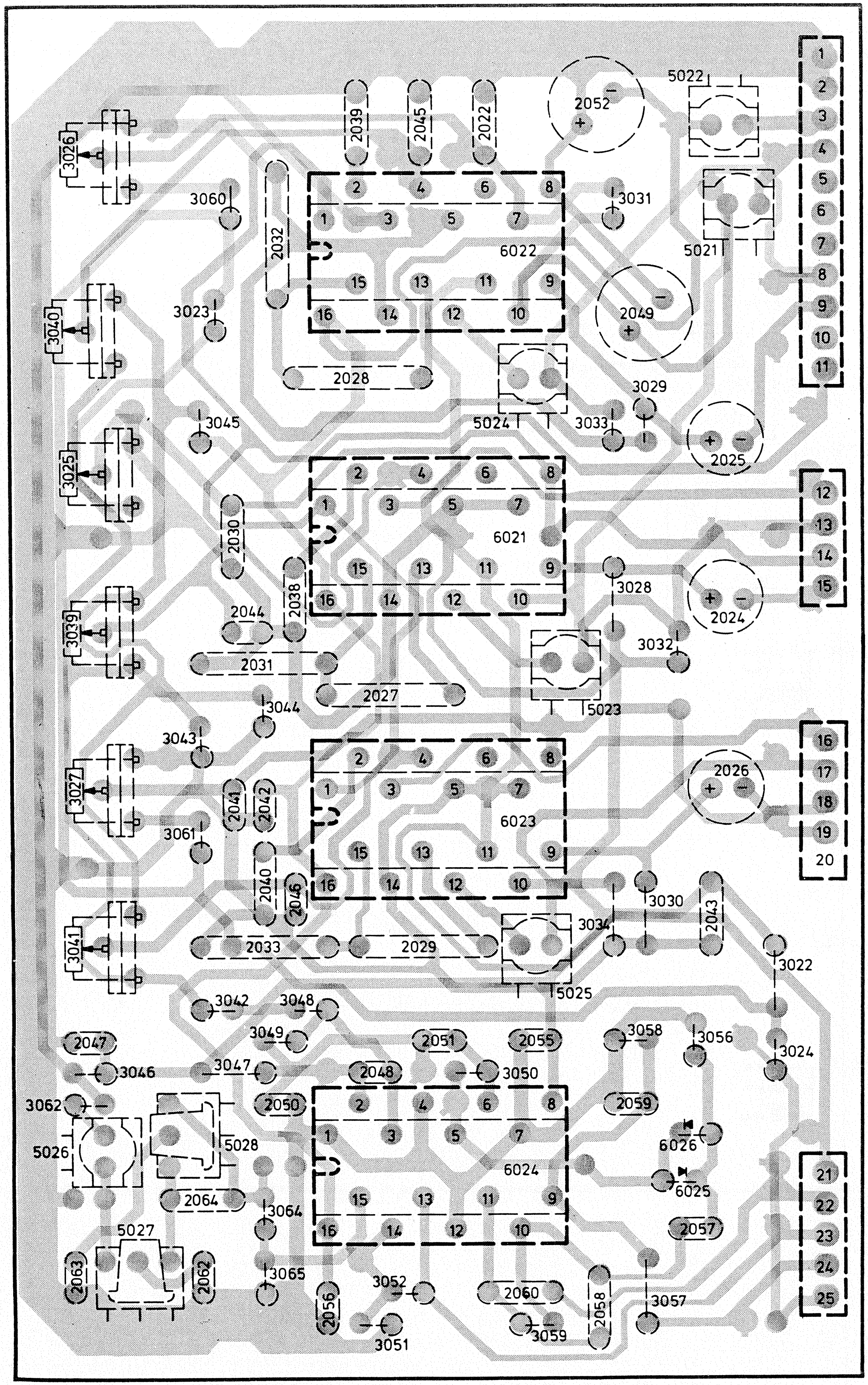

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
3026
3060
3023
3040
3045
3025
3039
3043
3027
3061
3041
3042
3048
3049
3047
3046
3062
5026
5028
2064
3064
5027
2063
2062
3065
3052
3051
2056
2060
3059
2058
3057
2039
2045
2022
2052
5022
5021
2032
6022
3031
2049
2028
5024
3033
3029
2025
2030
6021
2038
2044
2031
2027
3044
3028
2024
5023
3032
2026
2041
2042
6023
2040
2046
3030
2043
3034
2033
2029
5025
3022
2047
2051
2055
2048
3050
2050
2059
6024
3058
3056
3024
6026
6025
2057

Fig. IV-21

2···	3···	5···	6···
		5022	
2052			
2039			
2045			
2022			
	3026		
	3031		
	3060		
2032		5021	6022
	3023		
2049	3040		
2028			
	3029		
	3045	5024	
	3033		
2025			
	3025		
2030			6021
2038	3028		
2024			
2044	3039		
	3032		
2031			
2027			
	3044	5023	
	3043		
2026			
	3027		
2041			
2042			6023
	3061		
2040			
2046	3030		
2043	3034		
2033	3041		
2029			
	3022		
	3042		
	3048	5025	
	3049		
	3058		
2047	3056		
2051	3024		
2055	3047		
2048	3046		
2050	3050		
2059	3062		
		5028	6026
		5026	6024
2064			6025
	3064		
2057		5027	
2063	3065		
2062	3052		
2060	3057		
2056			
2058	3059		
	3051		

18857C4

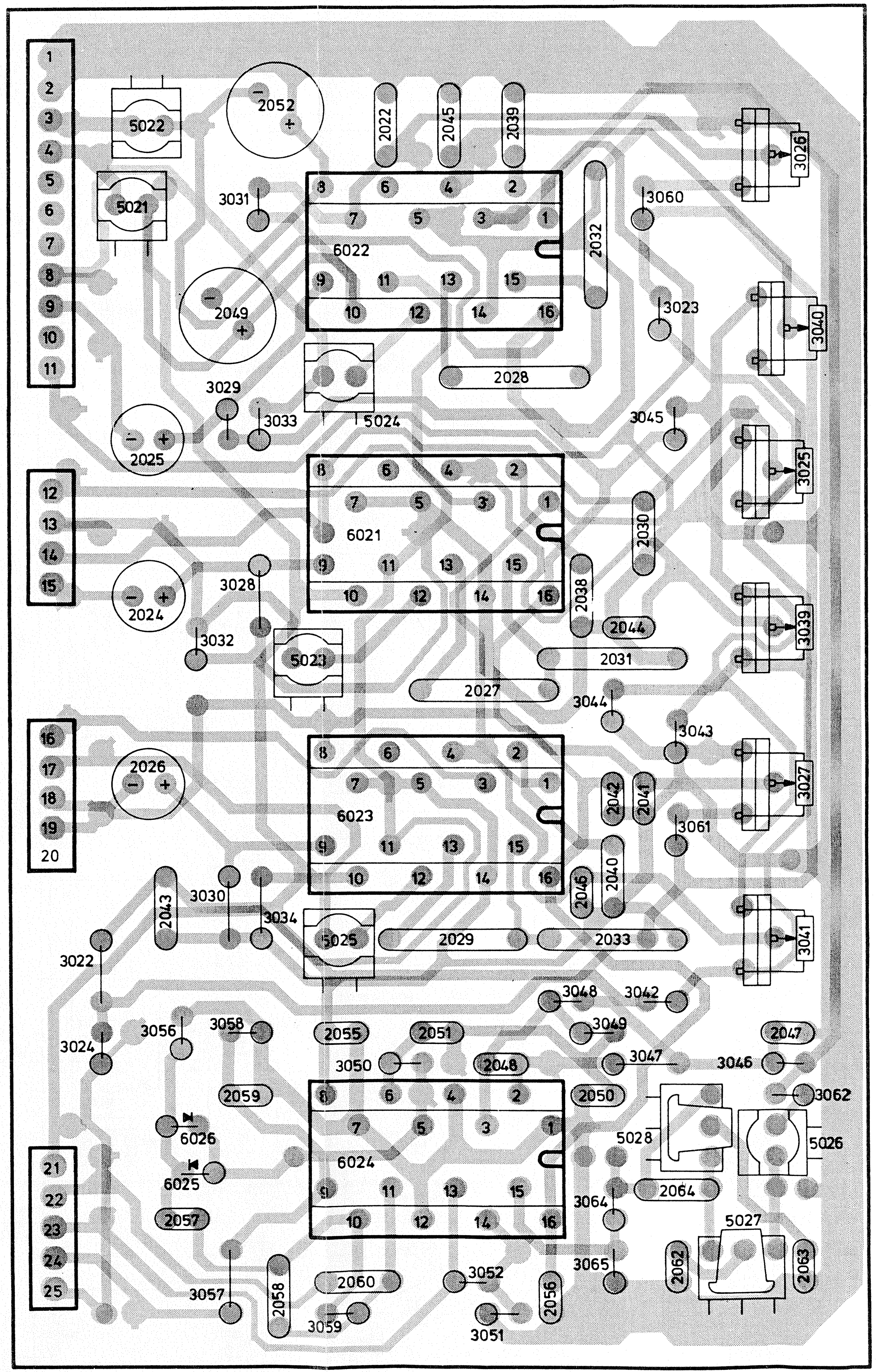

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
5022
5021
2052
3031
2049
3029
3033
5024
2025
2024
3028
3032
5023
2026
3030
3034
5025
3022
3024
3056
3058
6026
6025
2057
3057
2058
3059
3051
3052
2060
2056
2022
2045
2039
6022
2032
3060
3023
3040
2028
3045
6021
2030
3025
2038
2044
2031
2027
3044
3039
3043
6023
2042
2041
3061
3027
2043
2040
2046
2029
2033
3041
3048
3042
3049
3047
3046
2047
2055
2051
3050
2048
2059
2050
6024
5028
5026
3062
3064
2064
3065
5027
2062
2063

Fig. IV-22

18856 C 4

Circuit diagram G: Video processor 2 + Backlight compensation switch

2...	2846 2849 2877.2878 2852 2857.2856.2855 2871 2873 2880.2867.2881.2869 2861 2883.2886.2862.2884.2887.2863.2864
2...	2847.2848 2850.2851.2879 2853.2854 2858.2859.2860 2872 2866.2874.2882 2868 2870.2875.2885.2888 2865
3...	3846 3848 3847 3855···3861 3862···3865 3887···3892 3907.3909.3910.3908 3918···3924 3931···3937.3948 3952 3126 3646···3648
3...	3849 3851 3850 3866···3872 3873···3875.3899 3893···3898 3912.3914.3911.3913.3926.3927.3925 3938···3942.3949 3953
3...	3852 3854 3853 3876.3877.3879···3886.3900 3901···3906 3951 3915.3916.3917 3928.3929.3930 3943···3947.3950 3954
6...	6849 6850···6854 6859.6846.6847.6864···6868.6862.6870···6875.6863.6869 6646.6647
6...	6857.6856 6855.6858 6860.6861.6848.6878.6879.6876 6877
MISC.	5846 5847 DIA S1

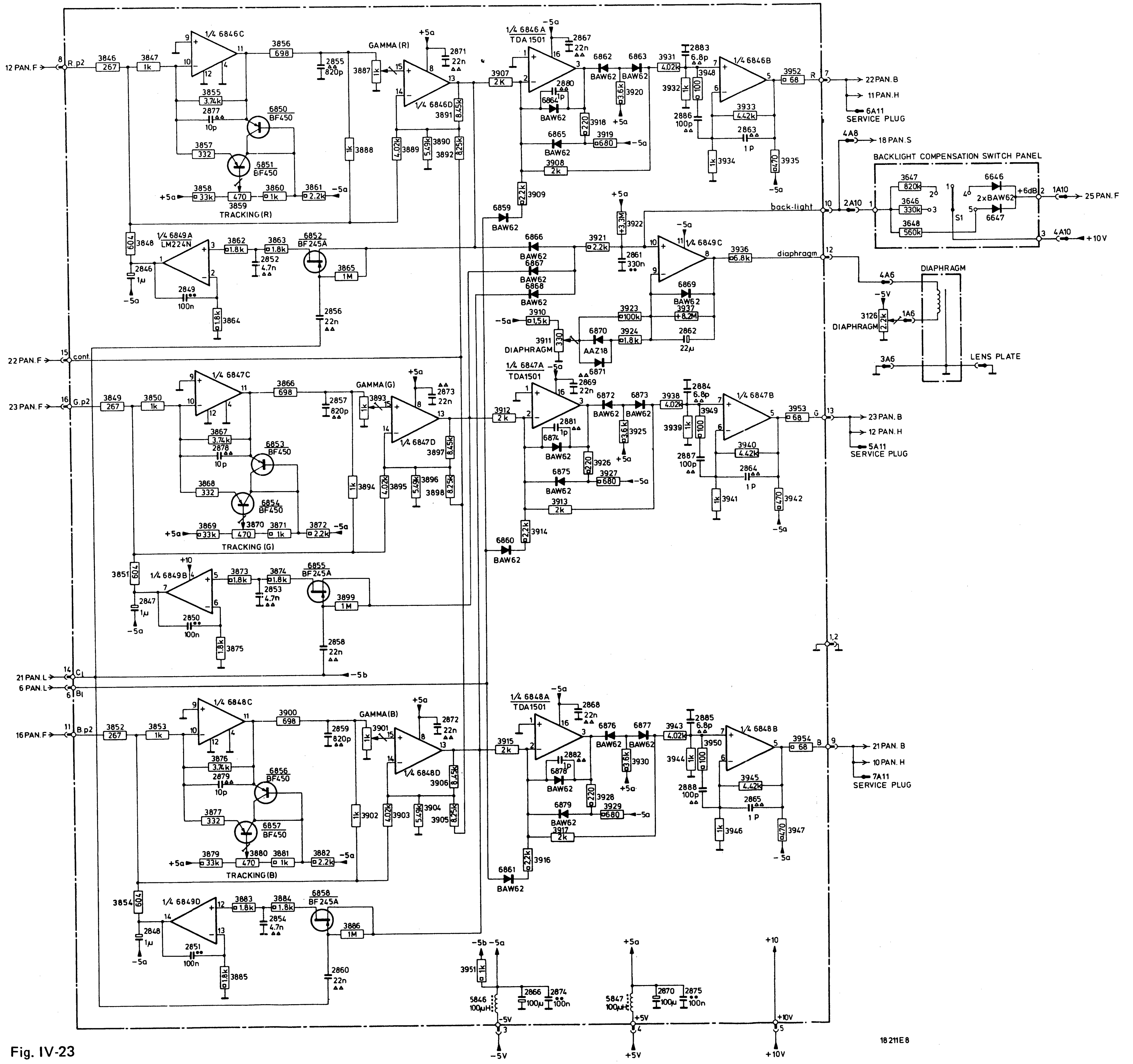
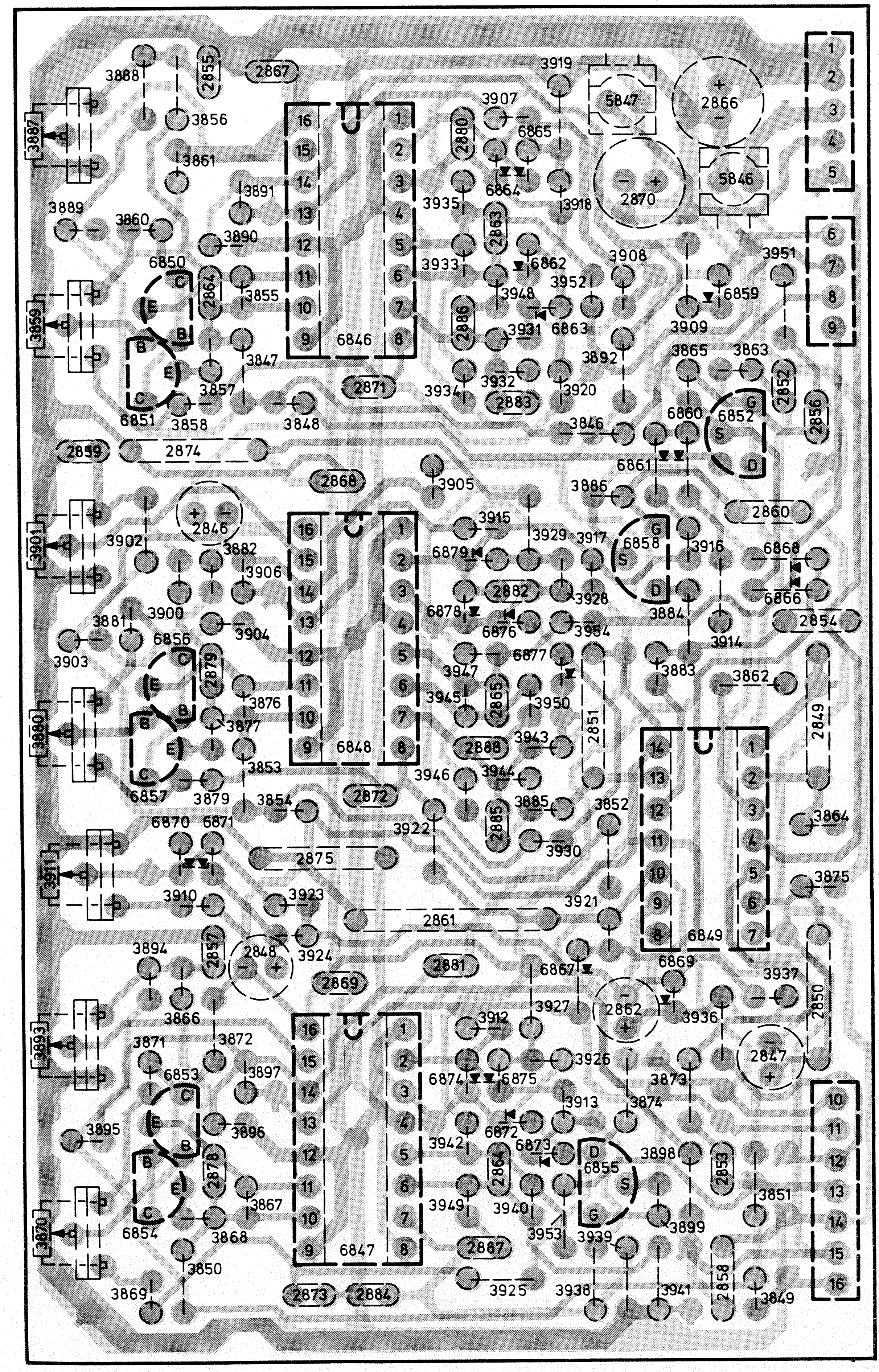

12 PAN. F
22 PAN. F
23 PAN. F
21 PAN. L
6 PAN. L
16 PAN. F
R p2
cont
G p2
B p2
1/4 6846C
1/4 6846D
1/4 6846A TDA 1501
1/4 6846B
1/4 6849A LM224N
1/4 6849C
1/4 6847C
1/4 6847D
1/4 6847A TDA1501
1/4 6847B
1/4 6849B
1/4 6848C
1/4 6848D
1/4 6848A TDA1501
1/4 6848B
1/4 6849D
GAMMA (R)
GAMMA (G)
GAMMA (B)
TRACKING (R)
TRACKING (G)
TRACKING (B)
BF450
BF245A
BAW62
AAZ18
DIAPHRAGM
back-light
diaphragm
22 PAN. B
11 PAN. H
6A11 SERVICE PLUG
4A8
18 PAN. S
BACKLIGHT COMPENSATION SWITCH PANEL
2A10
1A10
25 PAN. F
4A10
+10V
2xBAW62
+6dB
S1
4A6
3126
1A6
3A6
LENS PLATE
23 PAN. B
12 PAN. H
5A11 SERVICE PLUG
21 PAN. B
10 PAN. H
7A11 SERVICE PLUG
5846 100µH
5847 100µH
-5V
+5V
+10V
-5b
-5a
+5a
18211E8

Fig. IV-23
CS 68 755

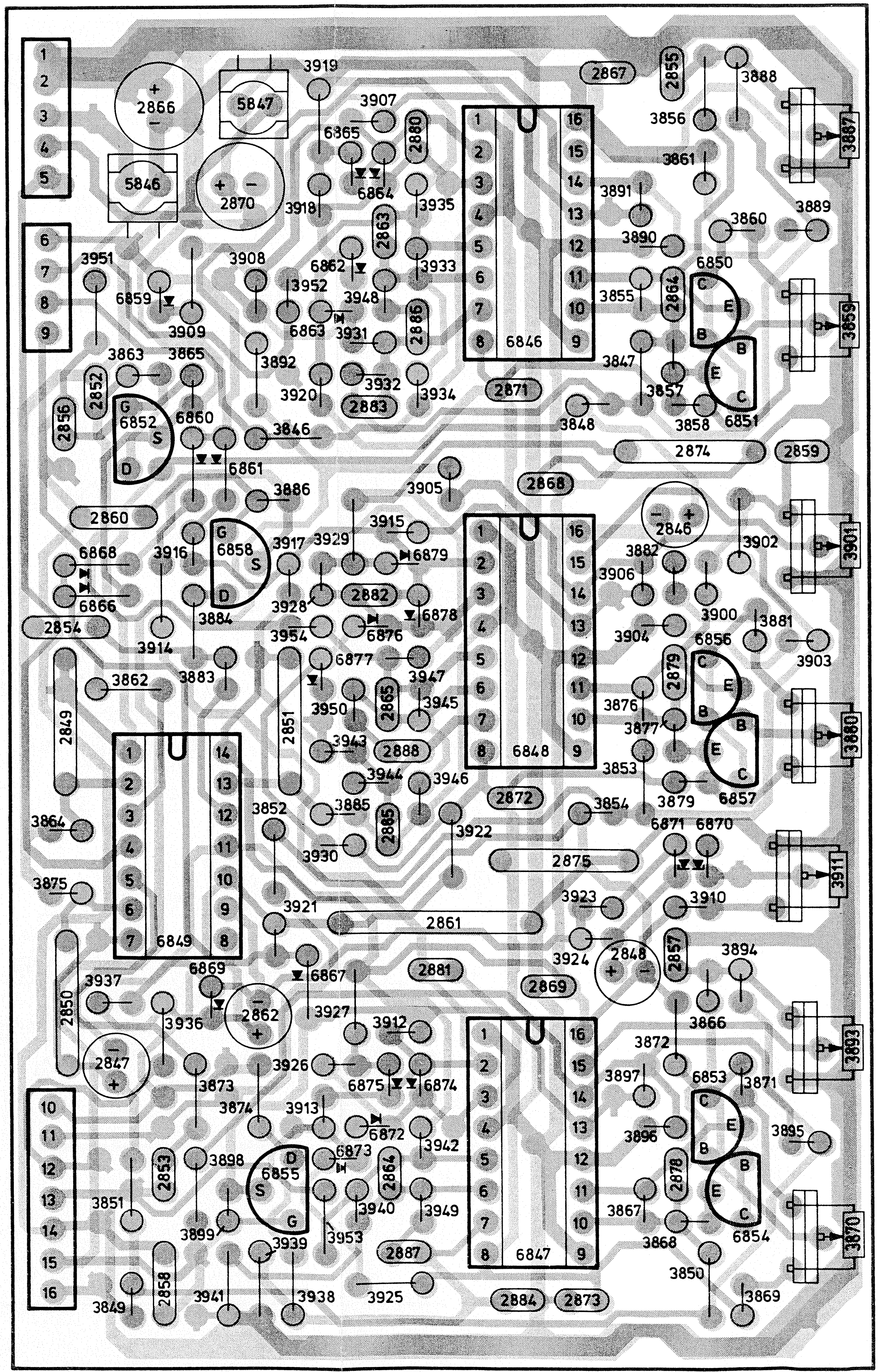
Printed board G



18859C4

Fig. IV-24

2···	3···	3···	5···	6···
2855 2867 2866 2880 2870 2863 2864 2886 2871 2852 2883 2856 2859 2874 2868 2860 2846 2882 2854 2879 2865 2851 2849 2888 2872 2885 2875 2861 2857 2848 2881 2869 2850 2862 2847 2878 2853 2864 2887 2858 2873 2884	3888 3856 3887 3861 3891 3889 3860 3890 3855 3859 3847 3932 3857 3934 3858 3848 3905 3902 3901 3882 3906 3900 3881 3904 3903 3947 3876 3877 3880 3853 3879 3854 3922 3911 3910 3923 3894 3924 3866 3893 3871 3872 3897 3895 3896 3867 3870 3868 3850 3869	3919 3907 3935 3918 3951 3908 3933 3952 3948 3931 3909 3865 3863 3892 3920 3846 3886 3915 3929 3917 3916 3928 3884 3954 3914 3883 3862 3945 3950 3943 3946 3944 3885 3852 3864 3930 3875 3921 3937 3927 3912 3936 3926 3873 3913 3874 3942 3898 3851 3949 3940 3899 3953 3939 3925 3938 3941 3849	5847 5846	6865 6864 6862 6850 6859 6863 6846 6860 6852 6851 6861 6858 6879 6868 6866 6878 6876 6856 6877 6848 6857 6870 6871 6849 6867 6869 6853 6874 6875 6872 6873 6855 6854 6847



18858C4

Fig. IV-25

Circuit diagram H: PAL-encoder

2...	2542 2543 2544.2511···2514.2545 2546 2547 2522 2524 2525 2526 2527 2529.2528 2532.2536.2533···2535 2538.2539 2540
2...	2515.2516 2517 2518 2519.2521.2520 2523 2530 2537 2541
3...	3513···3517 3528.3529 3533 3532 3536.3537 3540.3541.3586.3545 3555.3556.3557 3558 3564 3584.3565···3567.3569.3571.3570 3579···3582.3583.3585
3...	3587···3589 3518···3527 3531.3512 3535 3534.3538.3539.3543.3544.3542.3530.3546···3551.3553.3554.3559···3563 3568 3572.3573 3575 3578.3574.3577.3576
6...	6511···6514 6515···6520 6527.6528.6522 6521.6532.6523.6526.6525.6524.6530 6529 6534.6533 6531
MISC.	5519 5511.5512.5520 5513 5514 5521 5515 5516 1511 5522 5518 5517

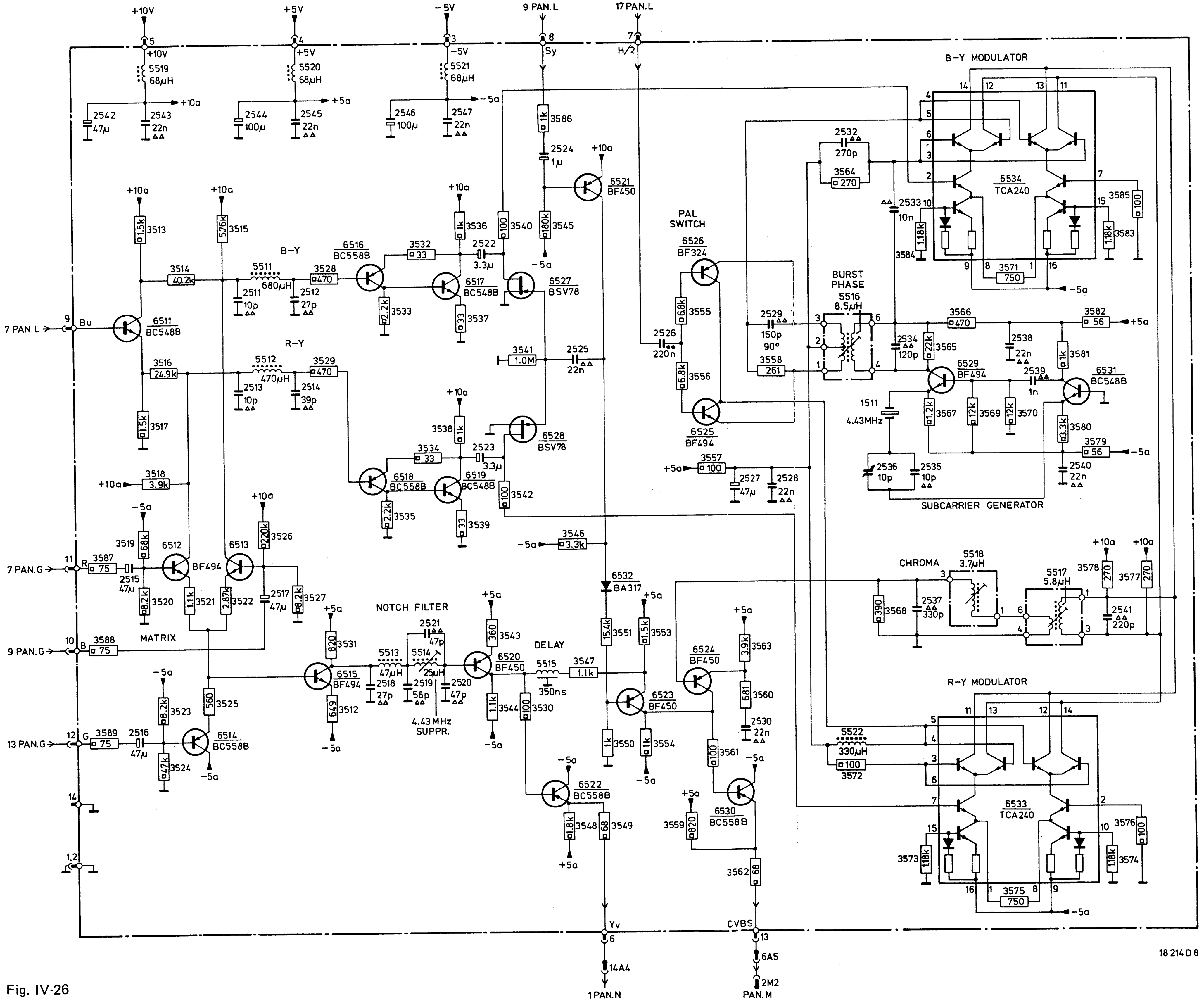

+10V
+5V
−5V
9 PAN.L
17 PAN.L
Sy
H/2
5519 68µH
5520 68µH
5521 68µH
+10a
+5a
−5a
B−Y MODULATOR
6534 TCA240
R−Y MODULATOR
6533 TCA240
PAL SWITCH
6526 BF324
6525 BF494
BURST PHASE 5516 8.5µH
150p 90°
1511 4.43MHz
SUBCARRIER GENERATOR
CHROMA
5518 3.7µH
5517 5.8µH
5522 330µH
B−Y
R−Y
6511 BC548B
6516 BC558B
6517 BC548B
6527 BSV78
6518 BC558B
6519 BC548B
6528 BSV78
6521 BF450
6512
6513
BF494
MATRIX
NOTCH FILTER
6515 BF494
6520 BF450
DELAY
5515 350ns
4.43 MHz SUPPR.
6532 BA317
6523 BF450
6524 BF450
6522 BC558B
6530 BC558B
6514 BC558B
6529 BF494
6531 BC548B
7 PAN.L
Bu
7 PAN.G
R
9 PAN.G
B
13 PAN.G
G
Yv
CVBS
14A4
1 PAN.N
6A5
2M2
PAN.M
18 214 D 8

Fig. IV-26

Printed board H

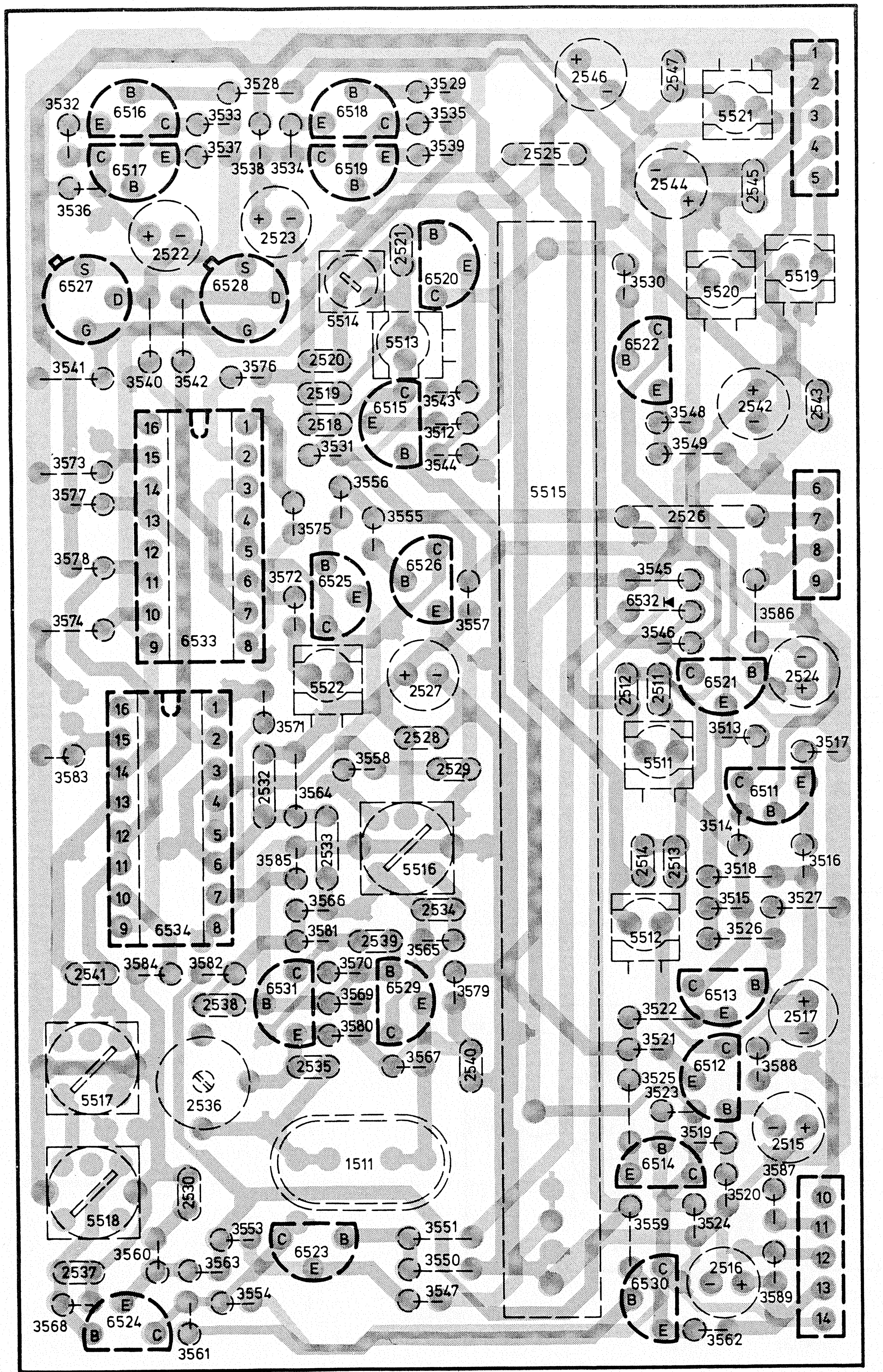

3532
6516
3528
3533
6518
3529
3535
3539
6517
6519
3537
3538
3534
3536
2525
2546
2547
5521
2544
2545
1
2
3
4
5
2522
2523
6527
6528
5514
6520
2521
5513
3530
5520
5519
6522
3541
3540
3542
3576
2520
2519
2518
6515
3543
3512
3544
3531
3548
2542
2543
3549
6533
3573
3577
3578
3574
3556
3555
3575
3572
6525
6526
3557
5515
2526
6
7
8
9
3545
6532
3546
3586
5522
2527
6521
2524
2512
2511
3513
3517
6534
3583
3571
2528
3558
2529
2532
3564
5511
6511
3514
5516
2533
3585
2514
2513
3518
3516
3515
3527
3566
2534
5512
3526
3581
2539
3565
2541
3584
3582
2538
6531
3570
6529
3569
3579
3580
6513
3522
2517
3521
3567
6512
3588
2535
2540
3525
3523
5517
2536
1511
3519
2515
6514
3587
3520
5518
2530
3559
3524
3553
6523
3551
3550
3547
3560
3563
2537
3554
6530
2516
3589
3568
6524
3561
3562
10
11
12
13
14

Fig. IV-27

2···	3···	3···	5···	6···	MISC.
2546					
2547	3528	3529			
	3532	3535		6516	
	3533		5521	6518	
	3537	3539			
2525				6517	
	3538			6519	
2544	3534				
2545	3536				
2523					
2522				6520	
2521		3530	5519	6527	
			5520	6528	
			5514		
			5513	6522	
	3541				
2520	3576				
2519	3540				
2542	3542				
2543	3543	3548		6515	
2518	3512				
	3531	3549			
	3573	3544			
	3577	3556			
		3555			
2526			5515		
	3575				
	3578			6526	
	3572	3545		6525	
				6532	
	3574	3586			
	3557	3546			
				6533	
2524					
2527			5522	6521	
2512					
2511					
	3571	3513			
2528		3517			
2529	3558		5511		
2532	3583				
	3564			6511	
		3514			
2533					
2514	3585	3516	5516		
2513		3518			
		3515			
2534	3566	3527			
		3526		6534	
2539	3581		5512		
	3565	3570			
2541	3584			6531	
	3582	3579			
	3569			6529	
2538					
		3522		6513	
2517	3580				
		3521			
	3567				
2535				6512	
		3588			
2540		3525	5517		
2536		3523			
		3519			
2515					
				6514	1511
		3587			
2530					
		3520			
	3553		5518		
	3551	3559			
	3560	3524		6523	
2537	3563				
2516	3550			6530	
	3554	3589			
	3547			6524	
	3568				
		3562			
	3561				

18869C4

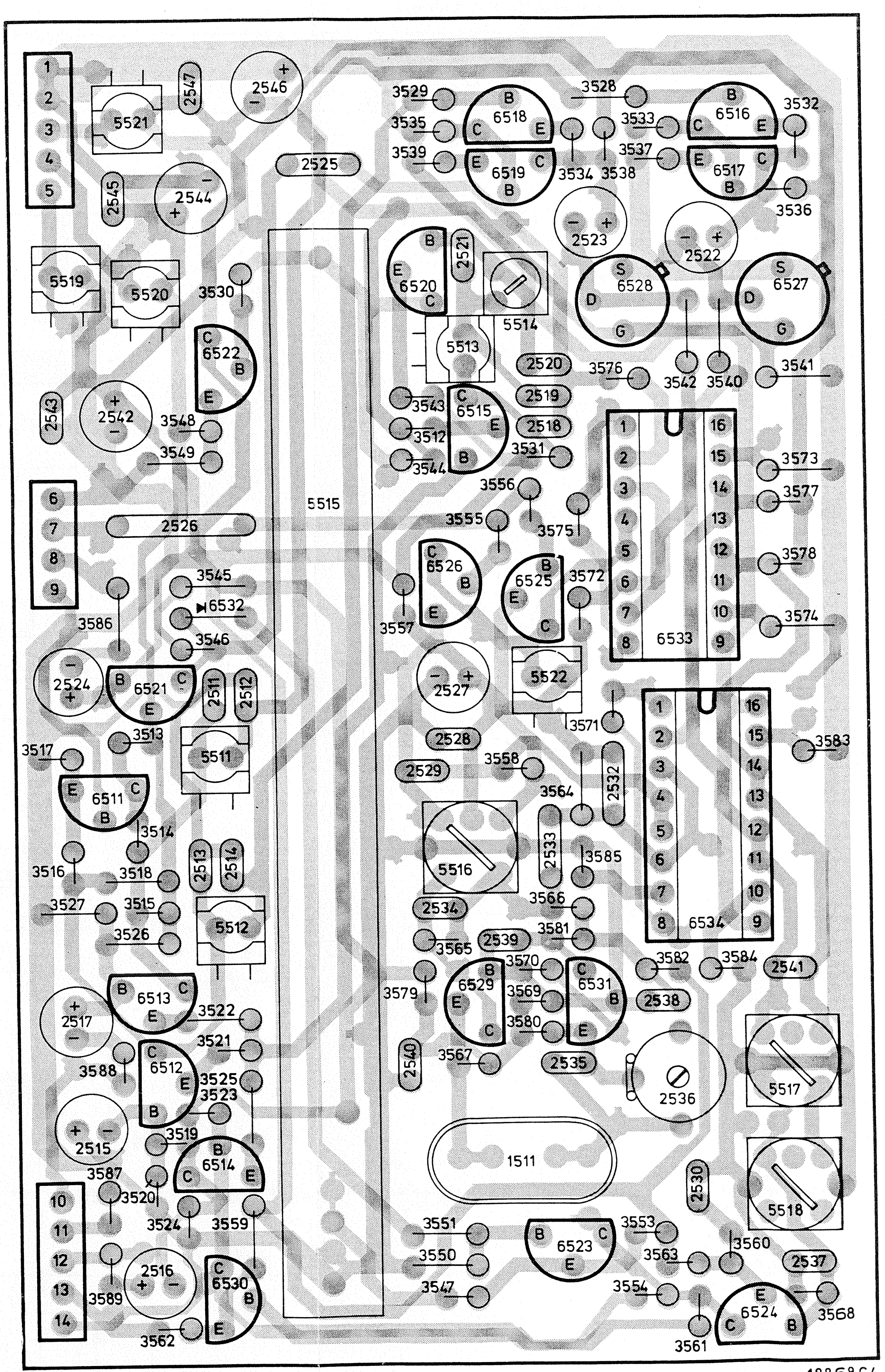
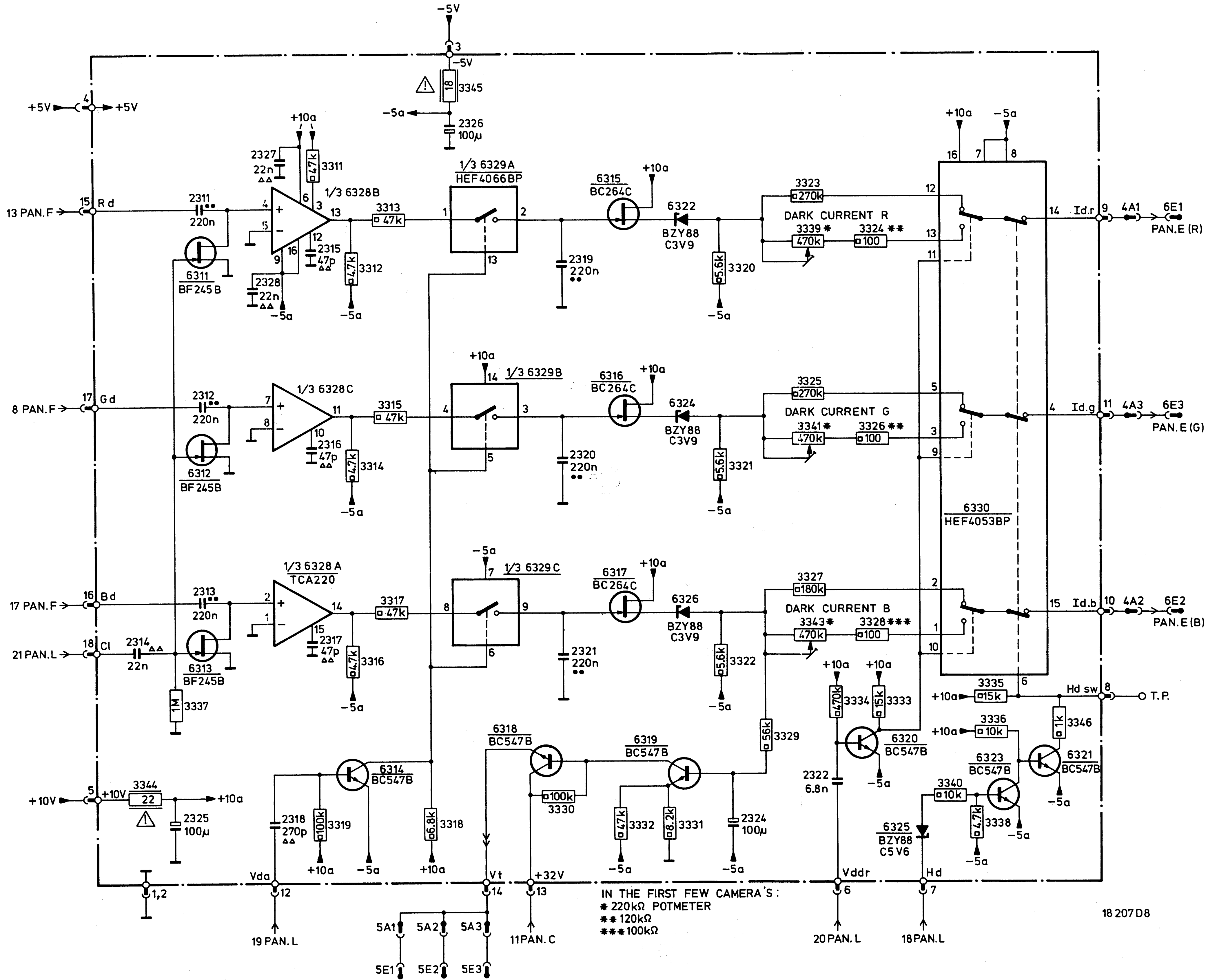

1
2
3
4
5
5521
2547
2546
2545
2544
2525
3529
3535
3539
6518
6519
3528
3533
3537
3534
3538
6516
6517
3532
3536
2523
2522
6528
6527
5519
5520
3530
6520
2521
5514
5513
6522
2520
2519
2518
3576
3542
3540
3541
3543
6515
3512
3544
3531
2543
2542
3548
3549
5515
3556
3555
3575
6
7
8
9
2526
3545
6532
3546
3586
6521
2524
2511
2512
6526
6525
3572
3557
2527
5522
3571
6533
3573
3577
3578
3574
3513
3517
5511
6511
3514
2528
2529
3558
3564
2532
6534
3583
3516
3518
3515
3527
3526
2513
2514
5512
5516
2533
3585
3566
2534
3565
2539
3581
3579
6529
3570
3569
3580
6531
3582
3584
2541
2538
6513
2517
3522
3521
6512
3588
3525
3523
2540
3567
2535
2536
5517
2515
3519
6514
3587
3520
3524
3559
1511
2530
5518
3551
3550
3547
6523
3553
3563
3560
2537
3554
3568
6524
3561
10
11
12
13
14
2516
3589
6530
3562

Fig. IV-28

18868C4

Circuit diagram K: Dark current

2...	2314.2325.2311···2313.2328.2327.2318.2315···2317 2326 2319···2321 2324 2322
3...	3337 3311.3312···3317 3345 3330 3320···3322.3329.3323···3328.3339.3341.3343
3...	3344 3319 3318 3332 3331 3334 3333 3340 3338.3335.3336 3346
6...	6311···6313 6328 6314 6329.6318 6315···6317.6319.6322.6324.6326 6320.6325 6330.6323 6321


-5V
3
-5V
18
3345
-5a
2326
100μ
+5V
4
+5V
+10a
2327
22n
47k
3311
1/3 6328B
13 PAN.F
15
Rd
2311
220n
1/3 6329A
HEF4066BP
6315
BC264C
+10a
6322
BZY88
C3V9
3323
270k
DARK CURRENT R
3339 *
470k
3324 **
100
3313
47k
2315
47p
2328
22n
6311
BF245B
4.7k
3312
2319
220n
5.6k
3320
-5a
+10a
-5a
16
7
8
12
13
11
14
Id.r
9
4A1
6E1
PAN.E (R)
8 PAN.F
17
Gd
2312
220n
1/3 6328C
3315
47k
+10a
14
1/3 6329B
6316
BC264C
6324
BZY88
C3V9
3325
270k
DARK CURRENT G
3341 *
470k
3326 **
100
5
3
9
4
Id.g
11
4A3
6E3
PAN.E (G)
2316
47p
4.7k
3314
6312
BF245B
2320
220n
5.6k
3321
6330
HEF4053BP
17 PAN.F
16
Bd
2313
220n
1/3 6328A
TCA220
3317
47k
-5a
7
1/3 6329C
6317
BC264C
6326
BZY88
C3V9
3327
180k
DARK CURRENT B
3343 *
470k
3328 ***
100
2
1
10
15
Id.b
10
4A2
6E2
PAN.E (B)
21 PAN.L
18
Cl
2314
22n
2317
47p
6313
BF245B
4.7k
3316
2321
220n
5.6k
3322
1M
3337
+10a
+10a
470k
3334
15k
3333
3335
15k
6
Hd sw
8
T.P.
+10a
3336
10k
1k
3346
6318
BC547B
6319
BC547B
56k
3329
6320
BC547B
6323
BC547B
6321
BC547B
6314
BC547B
2322
6.8n
+10V
5
+10V
3344
22
+10a
2325
100μ
2318
270p
100k
3319
6.8k
3318
100k
3330
4.7k
3332
8.2k
3331
2324
100μ
3340
10k
6325
BZY88
C5V6
4.7k
3338
-5a
Vda
12
Vt
14
+32V
13
Vddr
6
Hd
7
1,2
19 PAN.L
5A1
5A2
5A3
5E1
5E2
5E3
PAN.E (R)
PAN.E (B)
PAN.E (G)
11 PAN.C
20 PAN.L
18 PAN.L
18 207 D8

IN THE FIRST FEW CAMERA'S:
* 220kΩ POTMETER
** 120kΩ
*** 100kΩ

Fig. IV-29

Printed board K

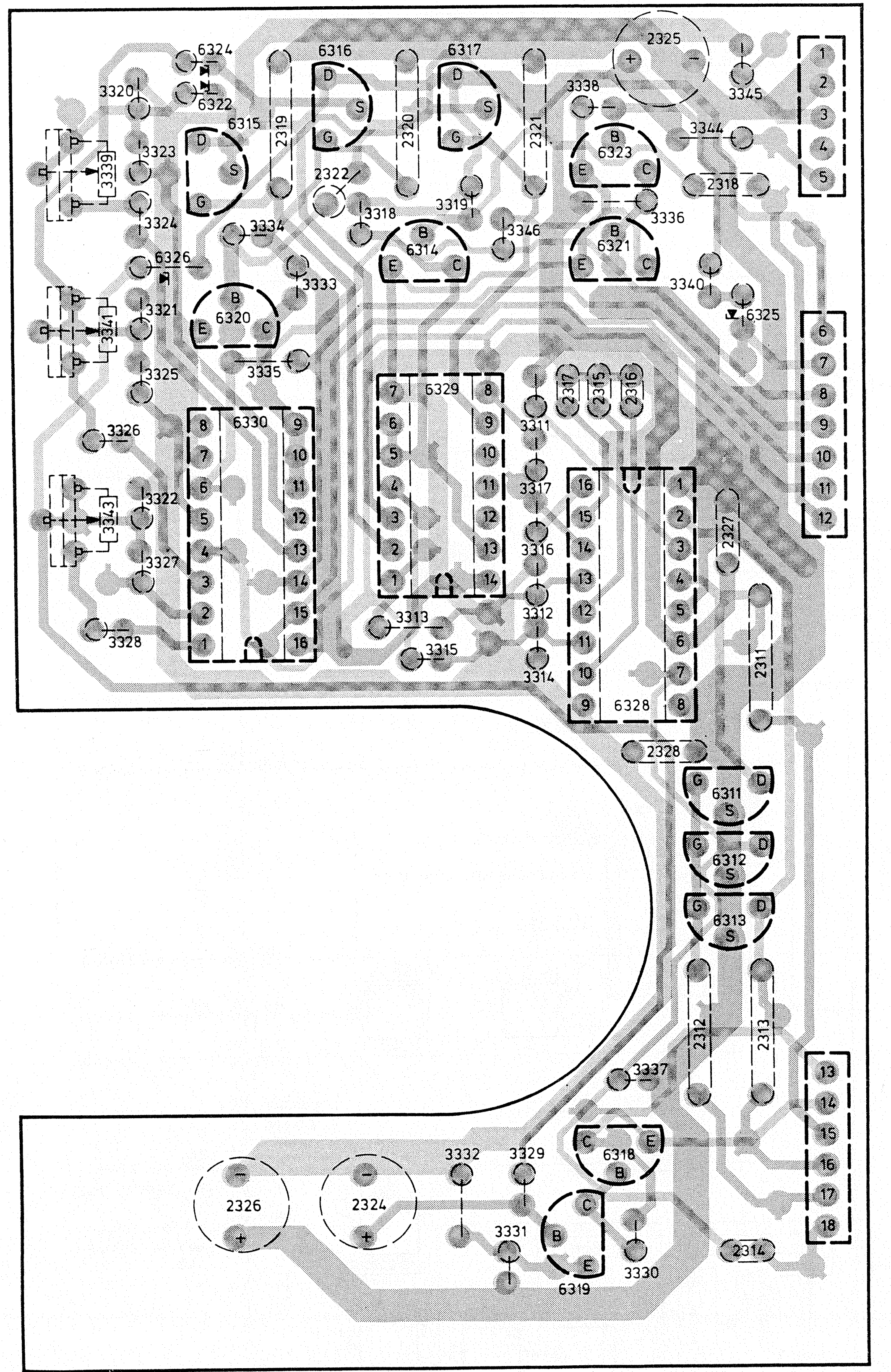
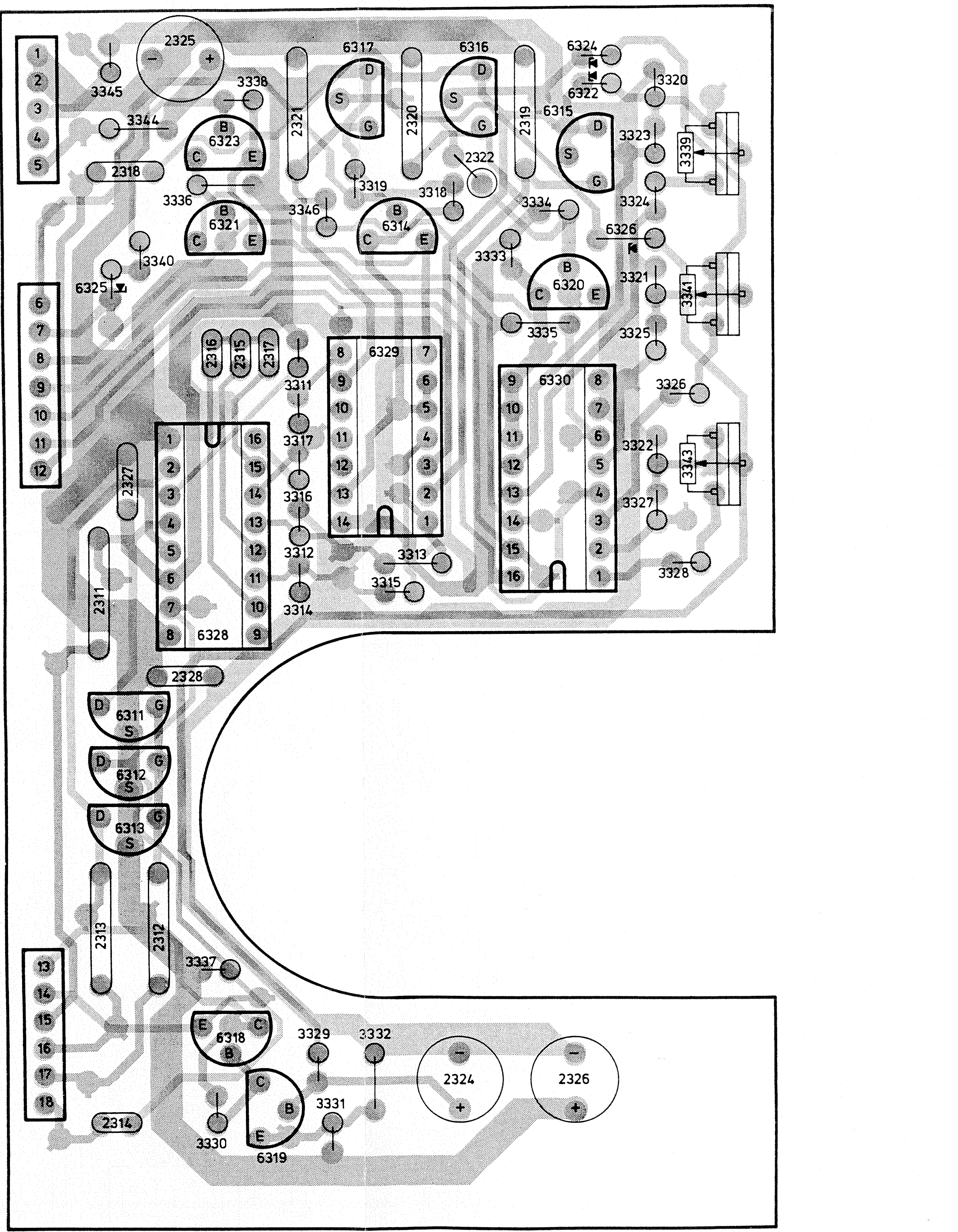

2325
6324
6322
6316
6317
3320
3338
3345
3344
6315
2319
2320
2321
6323
3339
3323
2322
2318
3318
3319
3336
3324
3334
6314
3346
6321
6326
3333
3340
6325
3341
3321
6320
3335
3325
2317
2315
2316
6329
6330
3311
3326
3317
3322
3343
2327
3316
3327
3313
3312
3328
3315
3314
2311
6328
2328
6311
6312
6313
2312
2313
3337
3332
3329
6318
2326
2324
3331
2314
3330
6319
G
D
S
B
C
E
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Fig. IV-30

2···	3···	3···	6···
2325			6324 6316
	3320	3338	6317
2319		3345	6322
2320		3344	6315
2321	3323		6323
	3339		
2322		3319	
2318	3318	3336	
	3324	3346	6314
	3334		6321
			6326
	3333	3340	
	3321		6325
			6320
	3335		
2317	3325		6329
2315			
2316	3311		6330
	3326		
	3322	3317	
	3343		
2327			
		3316	
	3327		
	3313	3312	
	3328		
		3315	
2311		3314	
			6328
2328			
			6311
			6312
			6313
2312			
2313			
		3337	
	3332	3329	6318
2326			
2324	3331		
2314			
		3330	
			6319

18863C4


2325
3345
3338
3344
2318
6323
3336
6321
3340
6325
2321
2320
2319
6317
6316
6315
6324
6322
3320
3323
3339
2322
3319
3318
3346
6314
3334
3324
6326
3333
6320
3321
3341
3335
3325
2316
2315
2317
3311
6329
6330
3326
3317
3322
3343
3327
2327
3316
3312
3313
3315
3314
3328
2311
6328
2328
6311
6312
6313
2313
2312
3337
6318
3329
3332
2324
2326
3331
6319
3330
2314
G
D
S
B
C
E
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

18862C4

Fig. IV-31

Circuit diagram L: Pulse generator

2...	2361 2363 2362.2365 2373 2366 2367.2372 2368 2371 2370 2369
3...	3361.3365.3362.3389 3369 3370 3392.3390.3393.3373.3374.3375.3376 3379 3380 3381 3396
3...	3364.3363 3397 3367.3368 3394.3391.3371.3395.3372 3378 3385 3383.3387.3388 3377 3386.3384
6...	6363 6364.6361 6362 6365 6369 6372.6366.6371.6373.6374 6376 6380···6382 6378.6375 6368.6370 6379 6377 6367
MISC.	1361 5361

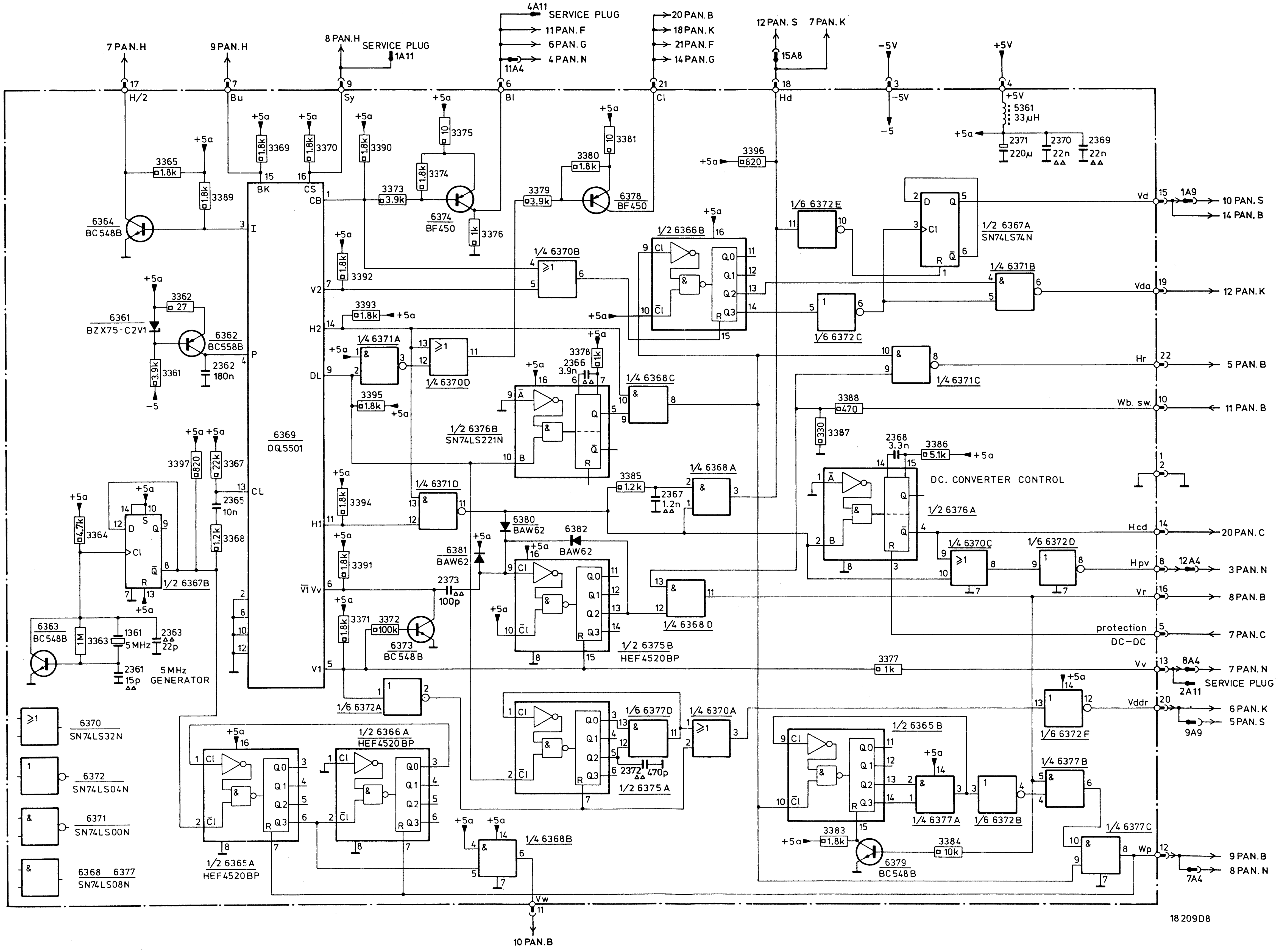

7 PAN.H
9 PAN.H
8 PAN.H
SERVICE PLUG
1A11
4A11
SERVICE PLUG
11 PAN.F
6 PAN.G
4 PAN.N
11A4
20 PAN.B
18 PAN.K
21 PAN.F
14 PAN.G
12 PAN.S
7 PAN.K
15A8
-5V
+5V
17 H/2
7 Bu
9 Sy
6 Bl
21 Cl
18 Hd
3 -5V
-5
4 +5V
5361 33μH
2371 220μ
2370 22n
2369 22n
+5a
3365 1.8k
3389 1.8k
3369 1.8k
3370 1.8k
3390 1.8k
3375 10
3374 1.8k
3373 3.9k
6374 BF450
3376 1k
3381 10
3380 1.8k
3379 3.9k
6378 BF450
3396 820
6364 BC548B
BK
CS
CB
I
6361 BZX75-C2V1
3362 27
6362 BC558B
3361 3.9k
2362 180n
P
3392 1.8k
V2
3393 1.8k
H2
DL
3395 1.8k
6369 OQ5501
CL
2365 10n
3397 820
3367 22k
3368 1.2k
H1
3394 1.8k
3391 1.8k
V̄1 Vv
3371 1.8k
3372 100k
6373 BC548B
2373 100p
V1
3364 4.7k
1/2 6367B
6363 BC548B
3363 1M
1361 5MHz
2363 22p
2361 15p
5MHz GENERATOR
1/4 6370B
1/4 6371A
1/4 6370D
1/2 6366B
1/6 6372E
1/2 6367A SN74LS74N
1/4 6371B
1/6 6372C
1/4 6371C
1/2 6376B SN74LS221N
3378 1k
2366 3.9n
1/4 6368C
1/4 6371D
3385 1.2k
2367 1.2n
1/4 6368A
6380 BAW62
6381 BAW62
6382 BAW62
1/2 6375B HEF4520BP
1/4 6368D
3388 470
3387 330
2368 3.3n
3386 5.1k
1/2 6376A
DC. CONVERTER CONTROL
1/4 6370C
1/6 6372D
1/6 6372A
1/2 6365A HEF4520BP
1/2 6366A HEF4520BP
1/4 6368B
1/6 6377D
1/4 6370A
2372 470p
1/2 6375A
1/2 6365B
1/4 6377A
1/6 6372B
1/4 6377B
1/4 6377C
3383 1.8k
6379 BC548B
3384 10k
3377 1k
1/6 6372F
CI
C̄I
Q0
Q1
Q2
Q3
R
Vd
1A9
10 PAN.S
14 PAN.B
Vda
12 PAN.K
Hr
5 PAN.B
Wb. sw.
11 PAN.B
Hcd
20 PAN.C
Hpv
12A4
3 PAN.N
Vr
8 PAN.B
protection DC-DC
7 PAN.C
Vv
8A4
7 PAN.N
2A11
SERVICE PLUG
Vddr
6 PAN.K
5 PAN.S
9A9
Wp
9 PAN.B
8 PAN.N
7A4
Vw
10 PAN.B
6370 SN74LS32N
6372 SN74LS04N
6371 SN74LS00N
6368 6377 SN74LS08N
18209D8

Fig. IV-32

Printed board L

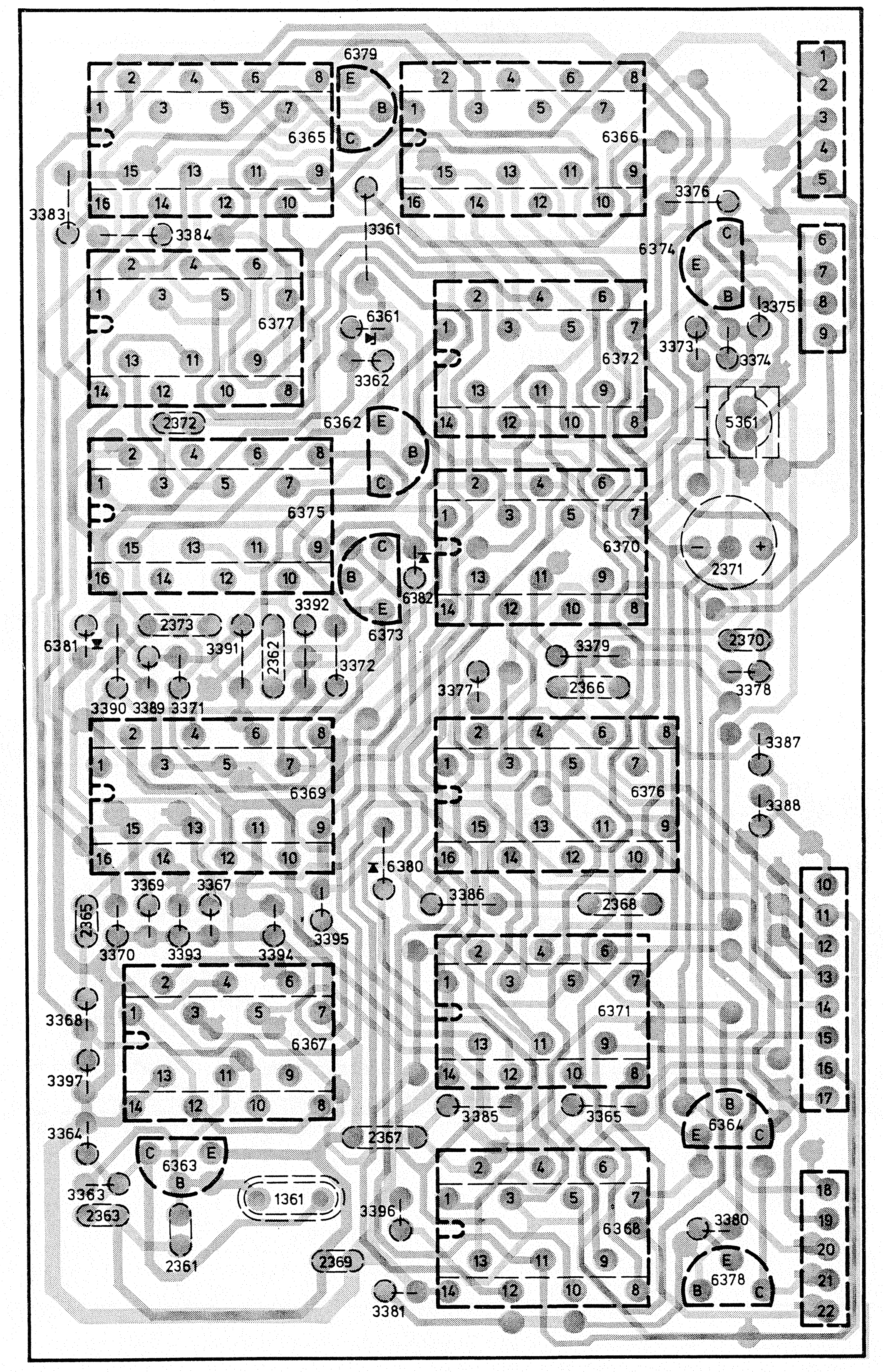
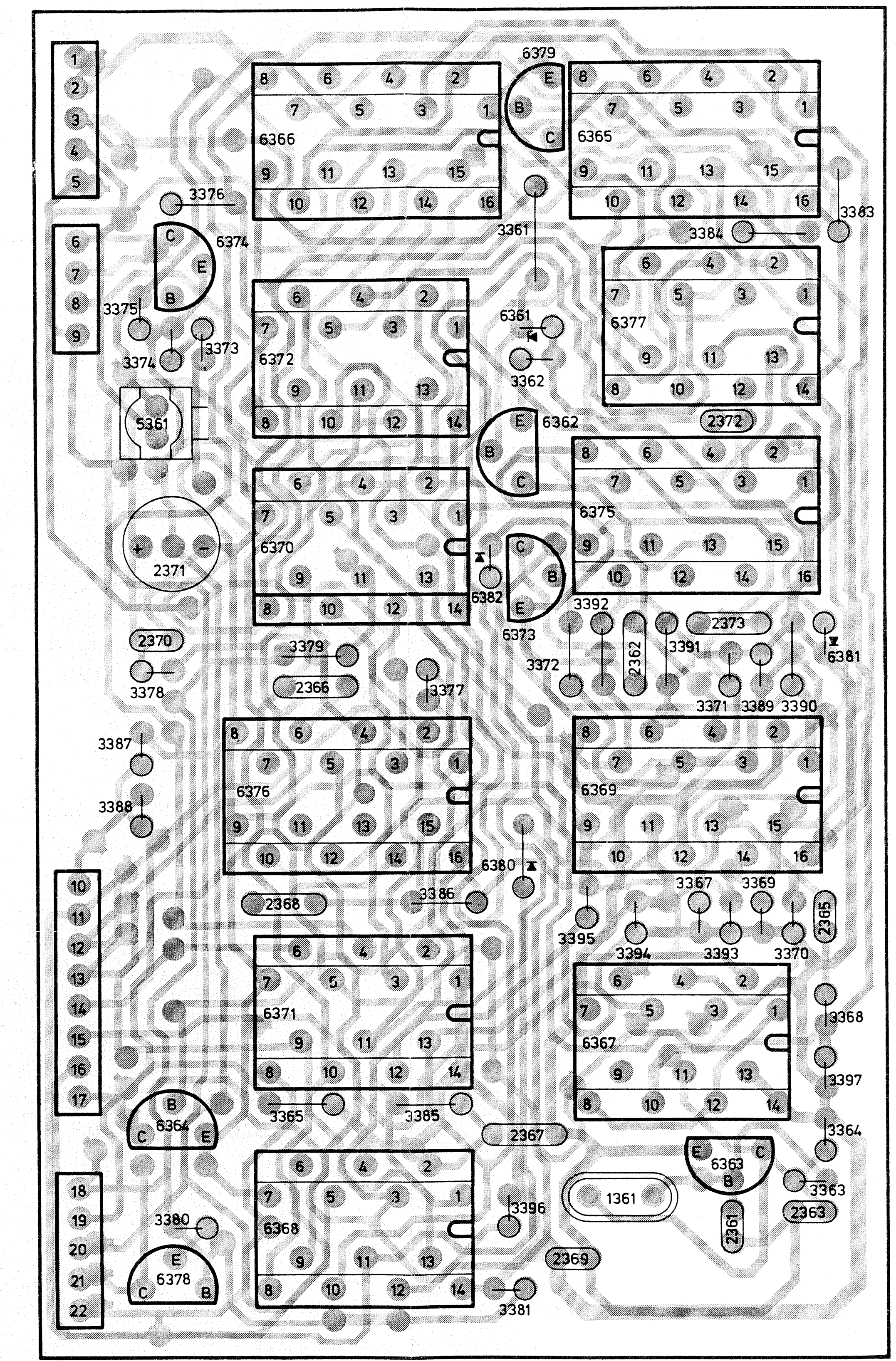

6379
6365
6366
6377
6372
6375
6370
6369
6376
6371
6367
6368
6374
6361
6362
6373
6382
6381
6380
6364
6363
6378
5361
1361
2361
2362
2363
2365
2366
2367
2368
2369
2370
2371
2372
2373
3361
3362
3363
3364
3365
3367
3368
3369
3370
3371
3372
3373
3374
3375
3376
3377
3378
3379
3380
3381
3383
3384
3385
3386
3387
3388
3389
3390
3391
3392
3393
3394
3395
3396
3397
E
B
C

Fig. IV-33

2···	3···	5···	6···
			6379
			6365 6366
	3376 3383 3384 3361		6374
	3375		6361 6377
	3373 3374		6372
	3362		
2372		5361	6362
			6375
			6370
2371			
	3392		6382
2373	3379		6373
2370	3391 3372		6381
2362	3377 3378		
2366	3390 3389 3371		
	3387		
			6369
	3388		6376
			6380
	3369 3367		
2368	3386		
2365			
	3395 3394 3393 3370		
	3368		6371
			6367
	3397		
	3385 3365		6364
2367	3364		
			6363
	3363		
2363	3396 3380		
			6368
2361			
2369			
			6378
	3381		

18865C4


6379
6366
6365
6372
6377
6370
6375
6376
6369
6371
6367
6368
6374
6361
6362
6373
6382
6381
6380
6364
6363
6378
5361
1361
2361
2362
2363
2365
2366
2367
2368
2369
2370
2371
2372
2373
3361
3362
3363
3364
3365
3367
3368
3369
3370
3371
3372
3373
3374
3375
3376
3377
3378
3379
3380
3381
3383
3384
3385
3386
3387
3388
3389
3390
3391
3392
3393
3394
3395
3396
3397
E
B
C

·18864C4

Fig. IV-34

Circuit diagram M: Microphone amplifier + LED panel

2...	2625.2627 2612 2613 2617.2618.2624.2619 2621.2620.2615.2626.2614.2623.2611.2616.2622
3...	3618 3624 3623 3617 3625 3613 3620 3612.3611.3621.3622.3616.3615.3619 3614 3628.3627.3626
6...	6611 6613 6612.6642 6641
MISC	P1 M1 M2 A5 S1 M3

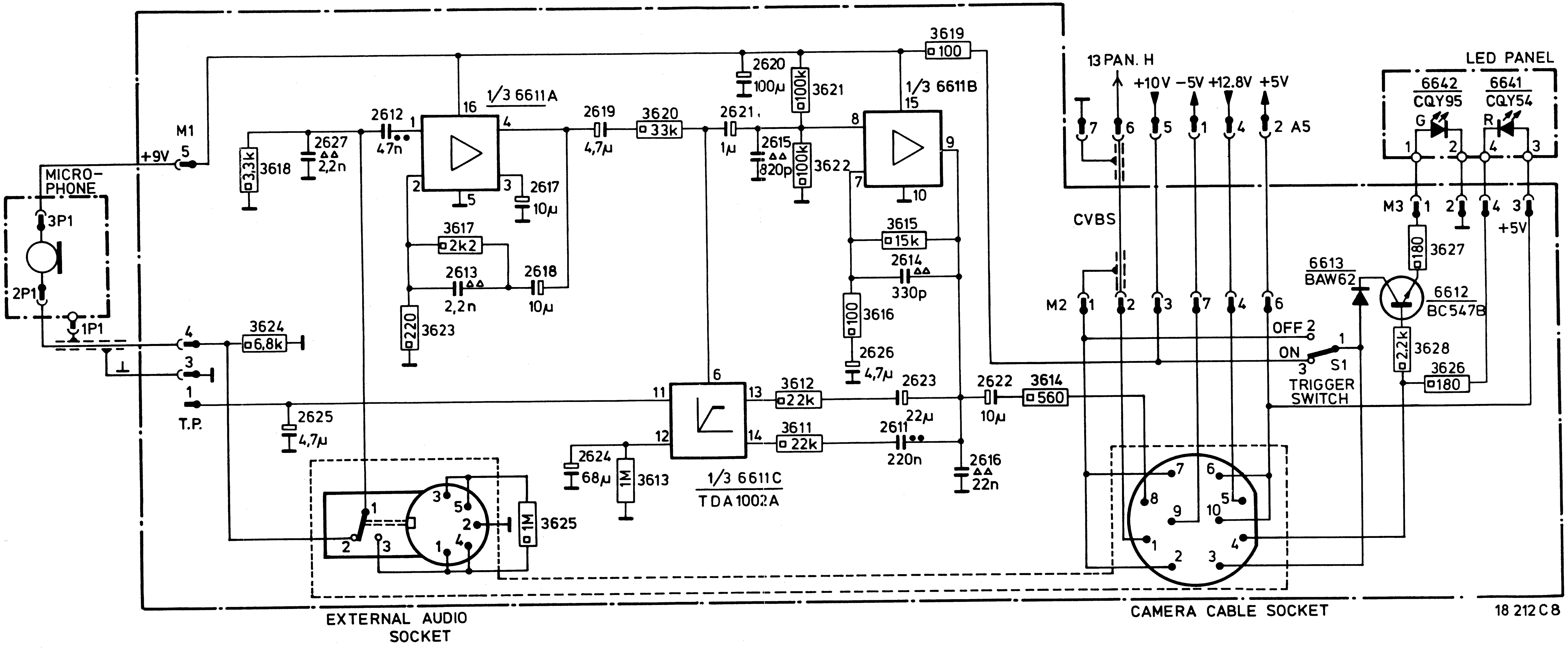

MICRO-
PHONE
3P1
2P1
1P1
M1
+9V
5
4
3
1
T.P.
3618
3,3k
2627
2,2n
2612
47n
1/3 6611A
16
1
4
2
3
5
2617
10µ
3617
2k2
2613
2,2n
2618
10µ
3623
220
3624
6,8k
2625
4,7µ
2619
4,7µ
3620
33k
2620
100µ
3621
100k
2621
1µ
2615
820p
3622
100k
3619
100
1/3 6611B
15
8
9
7
10
3615
15k
2614
330p
3616
100
2626
4,7µ
6
11
12
13
14
3612
22k
3611
22k
2623
22µ
2611
220n
2622
10µ
3614
560
2616
22n
2624
68µ
3613
1M
1/3 6611C
TDA 1002A
3625
1M
EXTERNAL AUDIO
SOCKET
13 PAN. H
+10V
-5V
+12.8V
+5V
A5
CVBS
M2
OFF 2
ON
3
S1
TRIGGER
SWITCH
6613
BAW62
6612
BC547B
3628
2,2k
3627
180
3626
180
M3
+5V
LED PANEL
6642
CQY95
G
6641
CQY54
R
CAMERA CABLE SOCKET
18 212 C8

Fig. IV-35

Printed board M

MISC	M2 M3 M1 S1
2···	2620 2613 2627 2612 2617 2618 2624 2619 2625 2621 2616 2611 2623 2615 2614 2626 2622
3···	3625 3624 3626···3628 3619 3623 3614 3618 3617 3613 3611 3620 3612 3621 3622 3616 3615
6···	6612 6613 6611

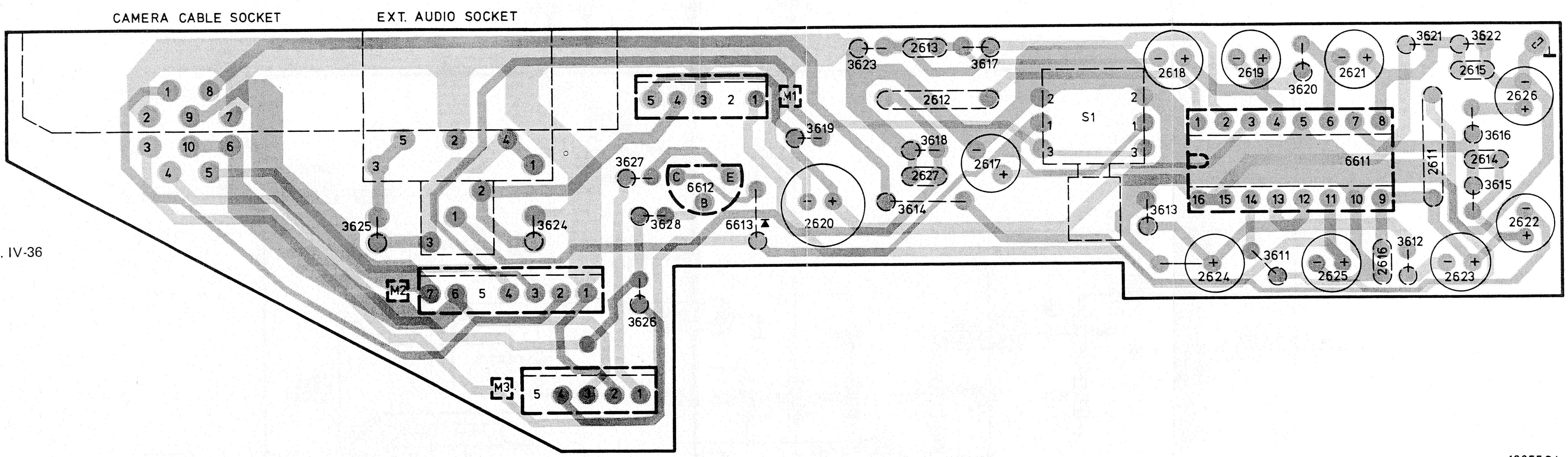

CAMERA CABLE SOCKET
EXT. AUDIO SOCKET
M1
M2
M3
S1
6611
6612
6613
2620
2612
2613
2617
2618
2619
2621
2622
2623
2624
2625
2626
3613
3624
3625
3626
3627
3628

Fig. IV-36

18855C4

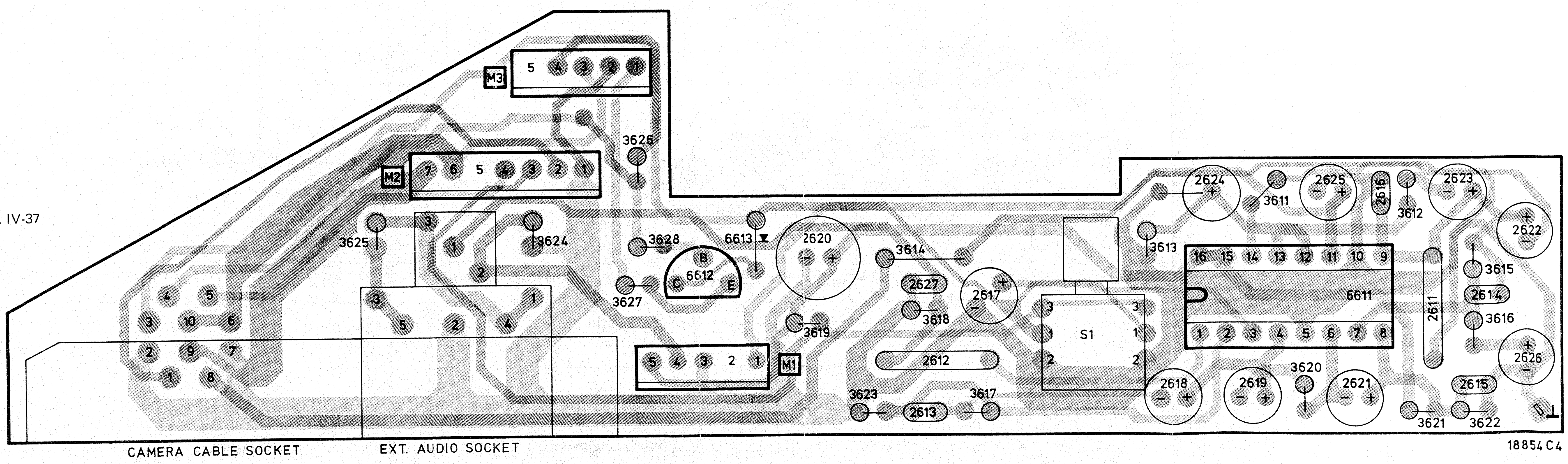

CAMERA CABLE SOCKET
EXT. AUDIO SOCKET
M1
M2
M3
S1
6611
6612
6613
2620
2612
2613
2617
2618
2619
2621
2622
2623
2624
2625
2626
3613
3624
3625
3626
3627
3628

Fig. IV-37

18854C4

Circuit diagram N: Viewfinder

2...	2673 2661.2662 2663.2664.2665 2666 2667 2668 2670.2669 2671
3...	3691 3662. 3663.3664 3670.3671.3672 3677 3679.3678 3680 3681.3682 3686 3687.3689.3688
3...	3666 3665.3667 3669.3668 3673.3674 3675.3676.3692 3683 3684.3685 3690
6...	6661 6664.6665 6666 6672 6667.6668
6...	6662 6663 6671 6669.6670
MISC.	5661 N1.1661.N2 N3.5662.5663.1662

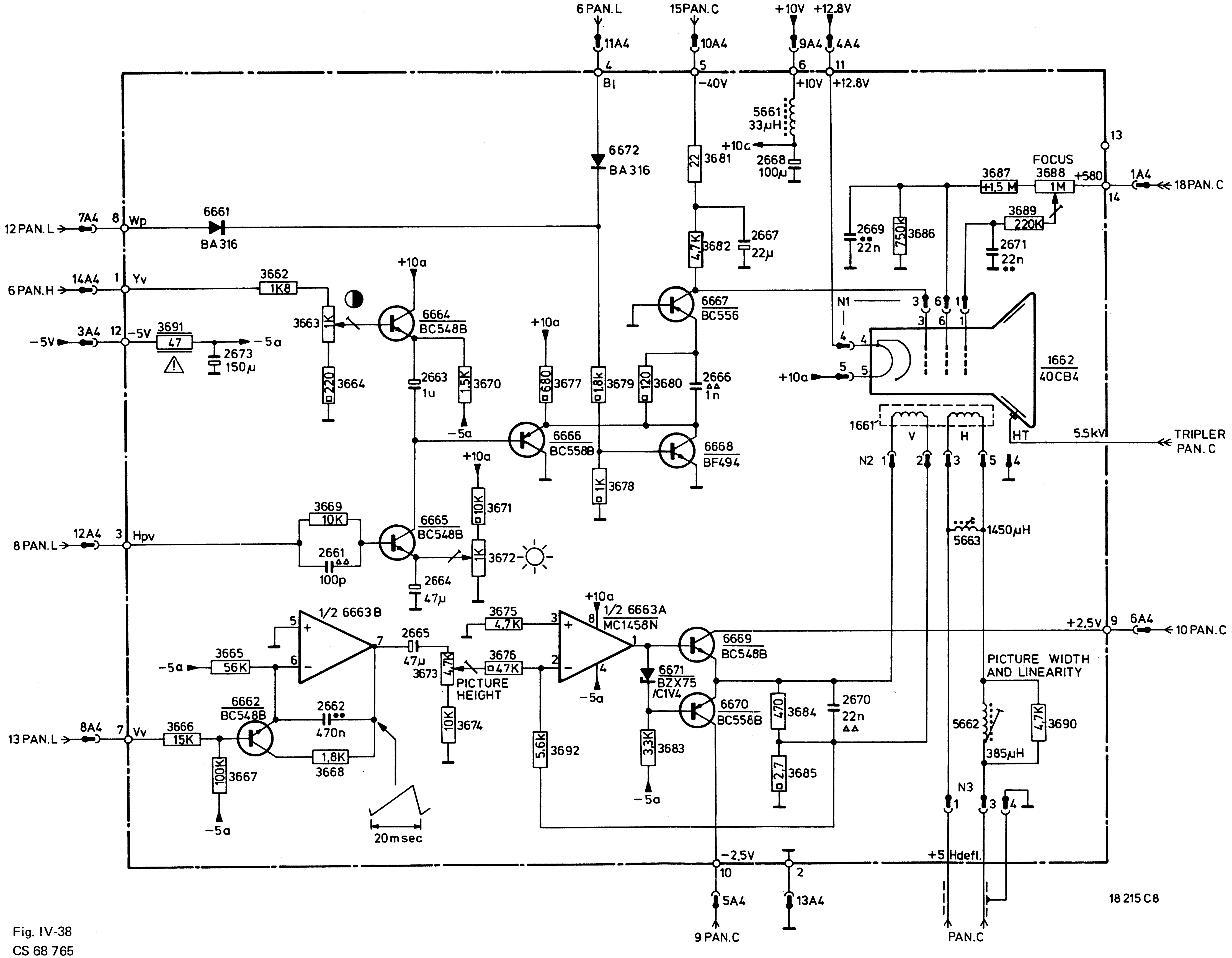
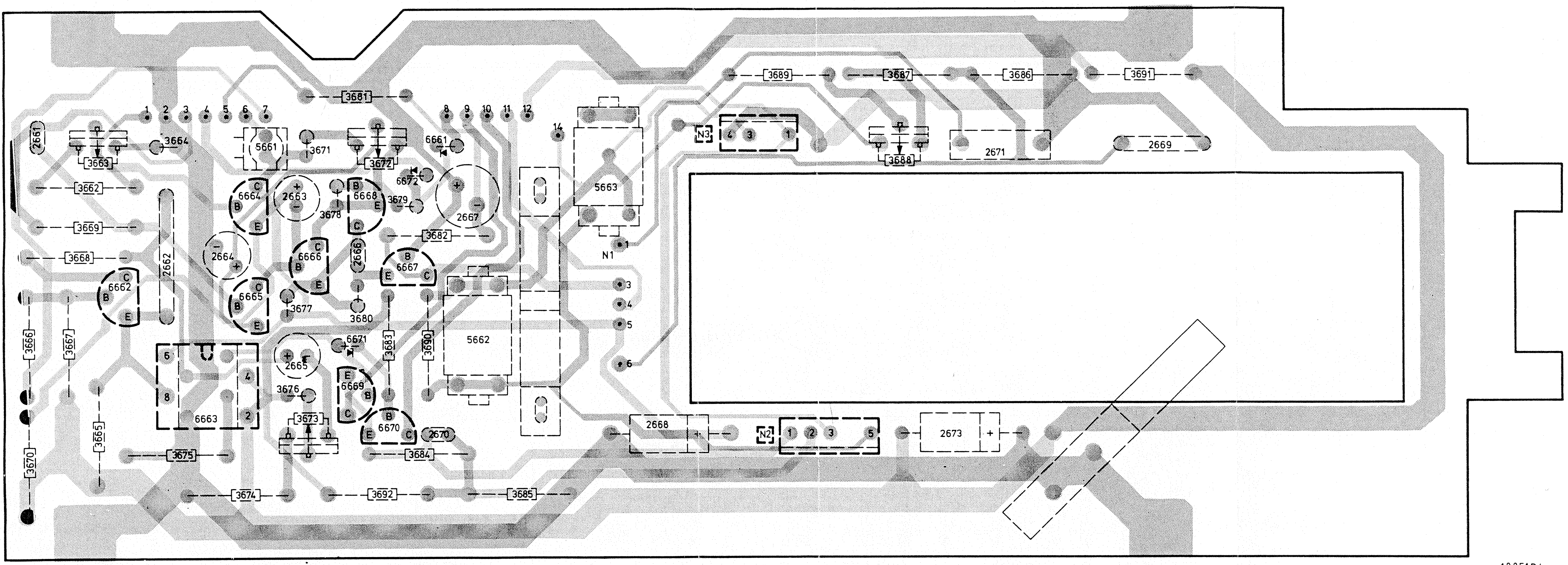

6 PAN.L
15PAN.C
+10V
+12.8V
11A4
10A4
9A4
4A4
4
5
6
11
Bl
-40V
+10V
+12.8V
5661
33μH
+10a
2668
100μ
3681
22
6672
BA316
13
FOCUS
3687
+1,5 M
3688
1M
+580
1A4
18PAN.C
14
3689
220K
2669
22n
750K
3686
2671
22n
12PAN.L
7A4
8
Wp
6661
BA316
3682
4,7K
2667
22μ
+10a
6PAN.H
14A4
1
Yv
3662
1K8
6664
BC548B
6667
BC556
N1
3
6
1
-5V
3A4
12
-5V
3691
47
-5a
2673
150μ
3663
1K
3664
220
2663
1u
3670
1,5K
+10a
3677
680
3679
1,8k
3680
120
2666
1n
1662
40CB4
+10a
5
-5a
6666
BC558B
6668
BF494
1661
V
H
HT
5.5kV
TRIPLER
PAN.C
N2
1
2
3
5
4
3678
1K
+10a
3671
10K
3669
10K
6665
BC548B
1450μH
5663
8PAN.L
12A4
3
Hpv
2661
100p
3672
1K
2664
47μ
+10a
1/2 6663A
MC1458N
3675
4,7K
1/2 6663B
+2,5V
9
6A4
10PAN.C
6669
BC548B
2665
47μ
3665
56K
-5a
3673
4,7K
3676
47K
PICTURE
HEIGHT
6671
BZX75
/C1V4
PICTURE WIDTH
AND LINEARITY
6662
BC548B
2662
470n
3666
15K
13PAN.L
8A4
7
Vv
3667
100K
3668
1,8K
3674
10K
3692
5,6K
3683
3,3K
6670
BC558B
3684
470
2670
22n
3685
2,7
5662
385μH
3690
4,7K
N3
20msec
-2,5V
10
2
+5
Hdefl.
5A4
13A4
9 PAN.C
PAN.C
18 215 C8

Fig. IV-38
CS 68 765

Printed board N

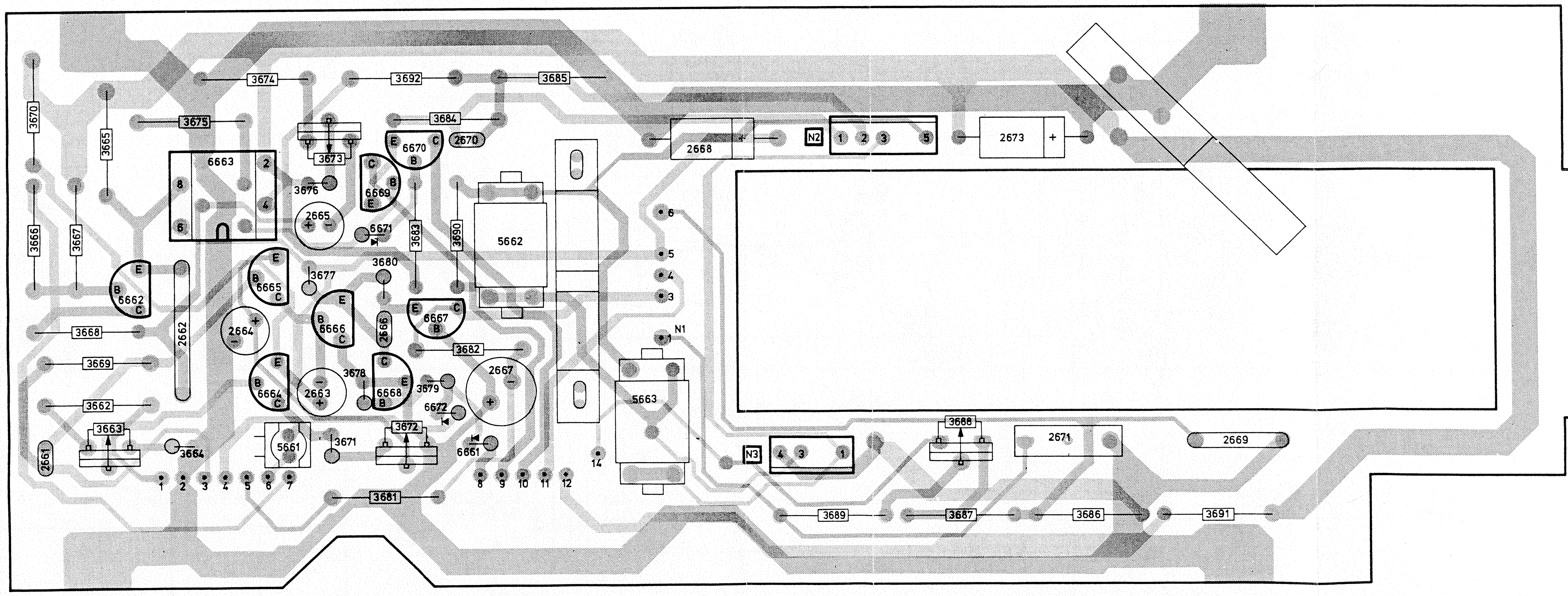
MISC	N1 N3 N2
2···	2661 2662 2664 2663 2665 2666 2670 2667 2668 2673 2671 2669
3···	3662···3670 3675 3674 3673 3671 3676···3681 3672 3692 3690 3682···3685 3689 3687 3688 3686 3691
5···	5661 5662 5663
6···	6662 6663 6664 6665 6666 6671 6667···6670 6672 6661



1 2 3 4 5 6 7 8 9 10 11 12 14
2661
3663
3664
5661
3671
3672
6661
3681
3689
3687
3686
3691
N3
4 3 1
3688
2671
2669
3662
6664
2663
6668
3679
6672
2667
3678
5663
3669
3682
N1
2664
6666
2666
6667
3668
2662
6662
6665
3677
3680
3666
3667
6671
3683
3690
5662
6663
2665
3676
6669
3665
3673
6670
2670
3684
3670
3675
3674
3692
3685
2668
N2
1 2 3 5
2673
C B E

Fig. IV-39

18851D4



3674
3692
3685
3670
3675
3665
3684
6670
2670
6663
3673
3676
6669
2665
6671
3683
3690
5662
3680
3666
3667
6662
6665
3677
6667
2662
3668
2664
6666
2666
3682
3669
3678
2667
3679
3662
6664
2663
6668
6672
3663
5661
3671
3672
3664
6661
2661
3681
1 2 3 4 5 6 7 8 9 10 11 12 14
5663
N1
2668
N2
1 2 3 5
2673
N3
4 3 1
3688
2671
2669
3689
3687
3686
3691
C B E

Fig. IV-40

18850D4

Circuit diagram S: Deflection

2...	2136 2178.2137.2138 2139.2182 2148 2140.2197.2149 2199.2198.2196 2200···2202 2145···2147 2154 2164 2153 2158.2159.2161 2157.2173.2160.2166 2162 2169 2163 2168
2...	2141 2190 2180 2143.2142 2144.2181 2191.2192.2193 2195 2194 2183···2185 2186···2188 2150···2152 2175 2203.2155.2176 2156 2177 2165 2174 2179.2170···2172.2167
3...	3292.3293.3288.3136···3139 3141···3149 3156···3165 3150···3152 3169···3171.3153···3155.3168.3167.3172.3180.3195.3173.3181.3196 3174.3182.3197 3198···3202.3183···3187.3175···3179 3190···3193.3188.3290.3250···3256 3194 3257···3262.3268···3275 3263···3267 3291
3...	3289.3294···3299.3140.3205.3166.3206.3207.3302 3300.3301 3208···3217 3221···3223 3224···3226 3220 3218 3219.3227···3231 3232···3234 3235···3249 3204 3303.3304.3286.3276···3280.3287 3281···3285
5...	5136 5137 5138 5139
6...	6137 6136 6176 6177 6158···6160 6139···6144 6164···6166 6182 6153 6172 6154 6173 6151.6152 6183.6155 6186.6174
6...	6181.6138 6184.6156 6180 6157 6178 6161···6163 6145···6150 6167···6169 6185 6171 6170 6179.6175

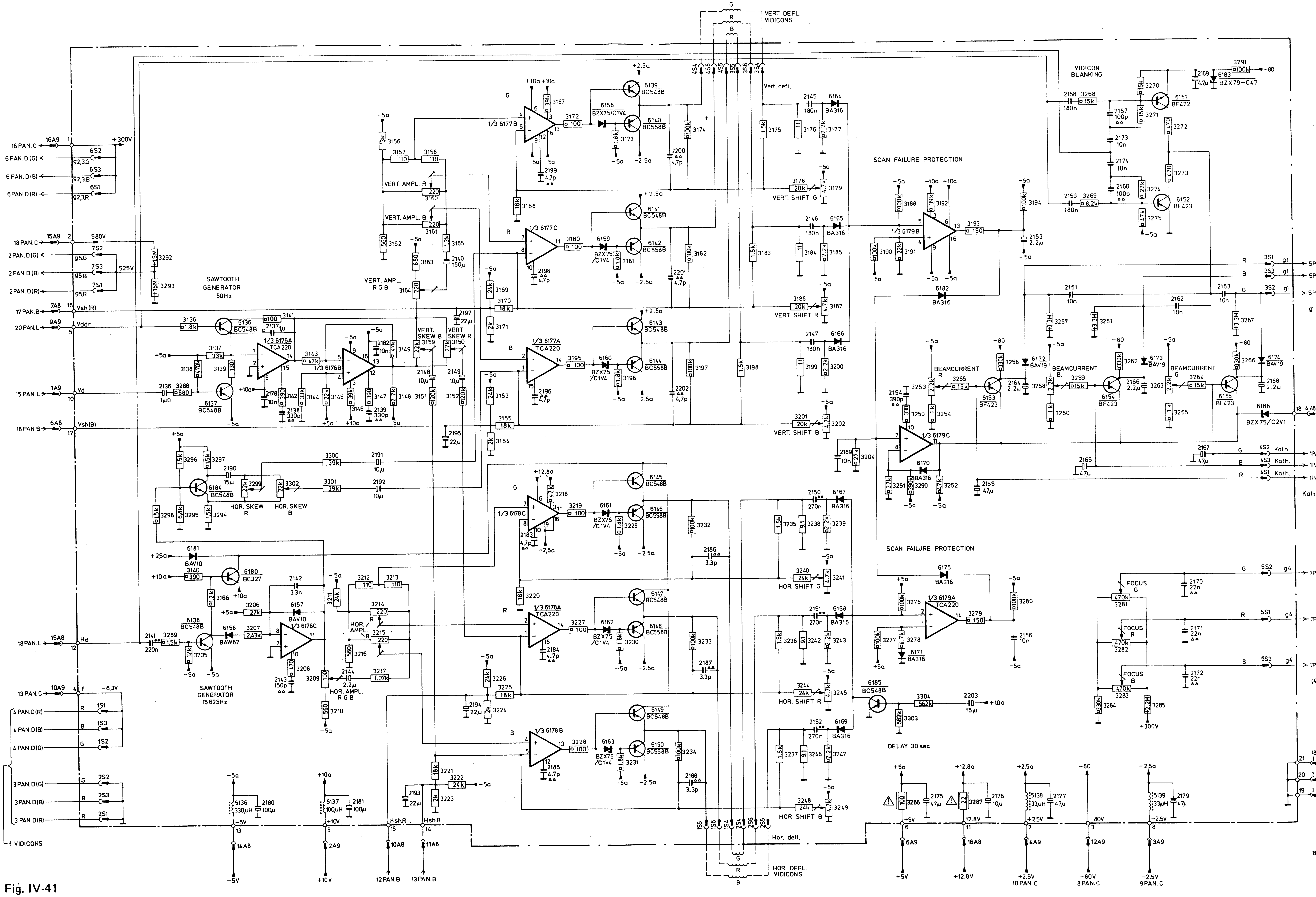

VERT. DEFL. VIDICONS
HOR. DEFL. VIDICONS
VIDICON BLANKING
SCAN FAILURE PROTECTION
SAWTOOTH GENERATOR 50Hz
SAWTOOTH GENERATOR 15625Hz
VERT. AMPL. R
VERT. AMPL. B
VERT. AMPL. RGB
VERT. SKEW B
VERT. SKEW R
VERT. SHIFT G
VERT. SHIFT R
VERT. SHIFT B
HOR. SKEW R
HOR. SKEW B
HOR. AMPL. B
HOR. AMPL. RGB
HOR. SHIFT G
HOR. SHIFT R
HOR SHIFT B
BEAMCURRENT R
BEAMCURRENT B
BEAMCURRENT G
FOCUS G
FOCUS R
FOCUS B
DELAY 30sec
Vert. defl.
Hor. defl.
1/3 6176A TCA220
1/3 6176B
1/3 6176C
1/3 6177A TCA220
1/3 6177B
1/3 6177C
1/3 6178A TCA220
1/3 6178B
1/3 6178C
1/3 6179A TCA220
1/3 6179B
1/3 6179C
16 PAN.C
6 PAN.D(G)
6 PAN.D(B)
6 PAN.D(R)
18 PAN.C
2 PAN.D(G)
2 PAN.D(B)
2 PAN.D(R)
17 PAN.B
20 PAN.L
15 PAN.L
18 PAN.B
18 PAN.L
13 PAN.C
4 PAN.D(R)
4 PAN.D(B)
4 PAN.D(G)
3 PAN.D(G)
3 PAN.D(B)
3 PAN.D(R)
f VIDICONS
5 PAN.D(R)
5 PAN.D(B)
5 PAN.D(G)
g1 VIDICONS
10 PAN.G
1 PAN.D(G)
1 PAN.D(B)
1 PAN.D(R)
Kath. VIDICONS
7 PAN.D(G)
7 PAN.D(R)
7 PAN.D(B)
g4 VIDICONS (FOCUS)
12 PAN.B
13 PAN.B
10 PAN.C
8 PAN.C
9 PAN.C
+300V
580V
525V
Vsh(R)
Vddr
Vd
Vsh(B)
Hd
HshR
Hsh.B
-5V
+10V
+5V
+12.8V
+2.5V
-80V
-2.5V
BC548B
BC558B
BC327
BAV10
BAW62
BA316
BAV19
BF422
BF423
BZX75/C1V4
BZX79-C47
BZX75/C2V1
82C4E8

Fig. IV-41

CS 68 767

Printed board S

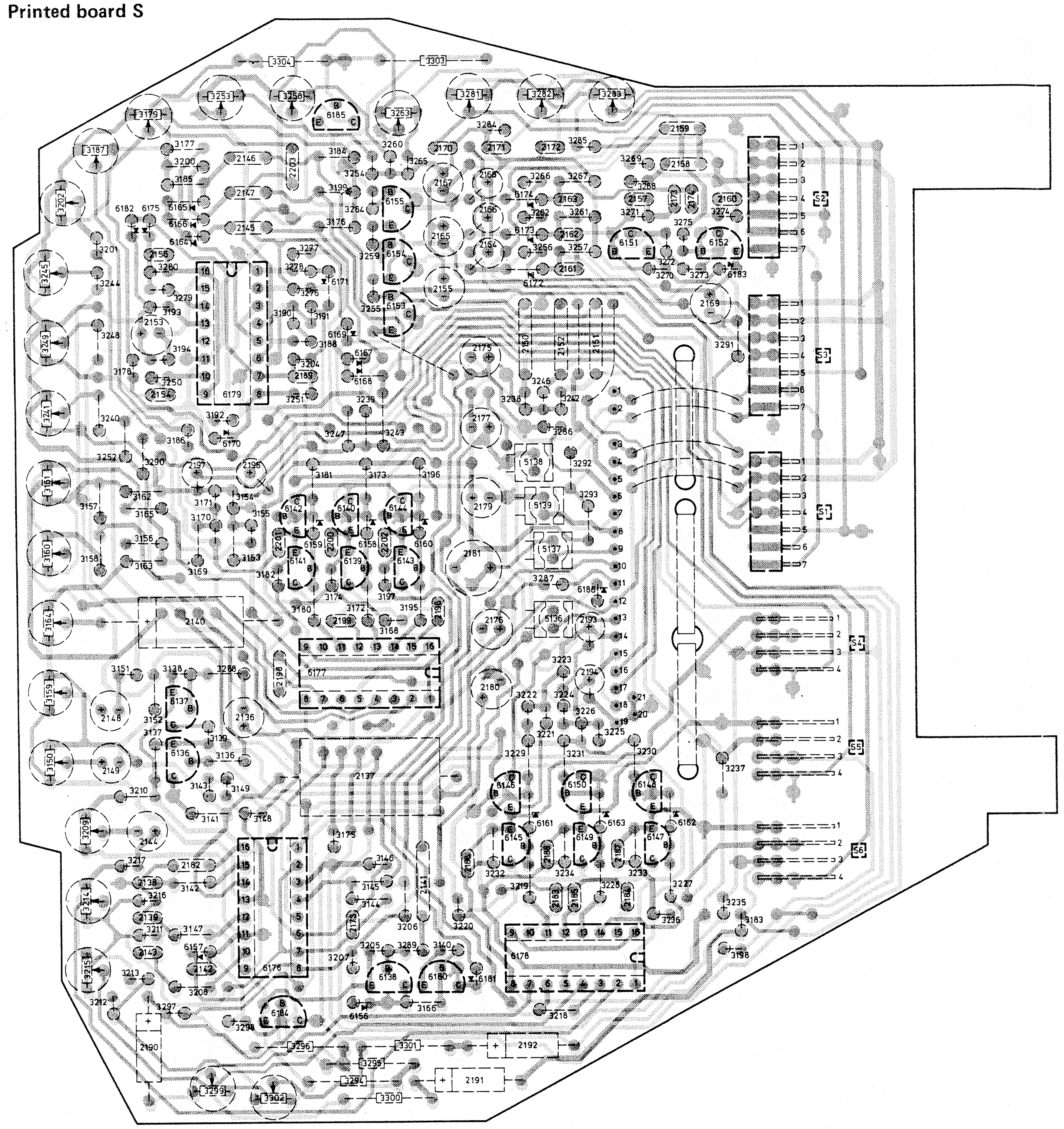
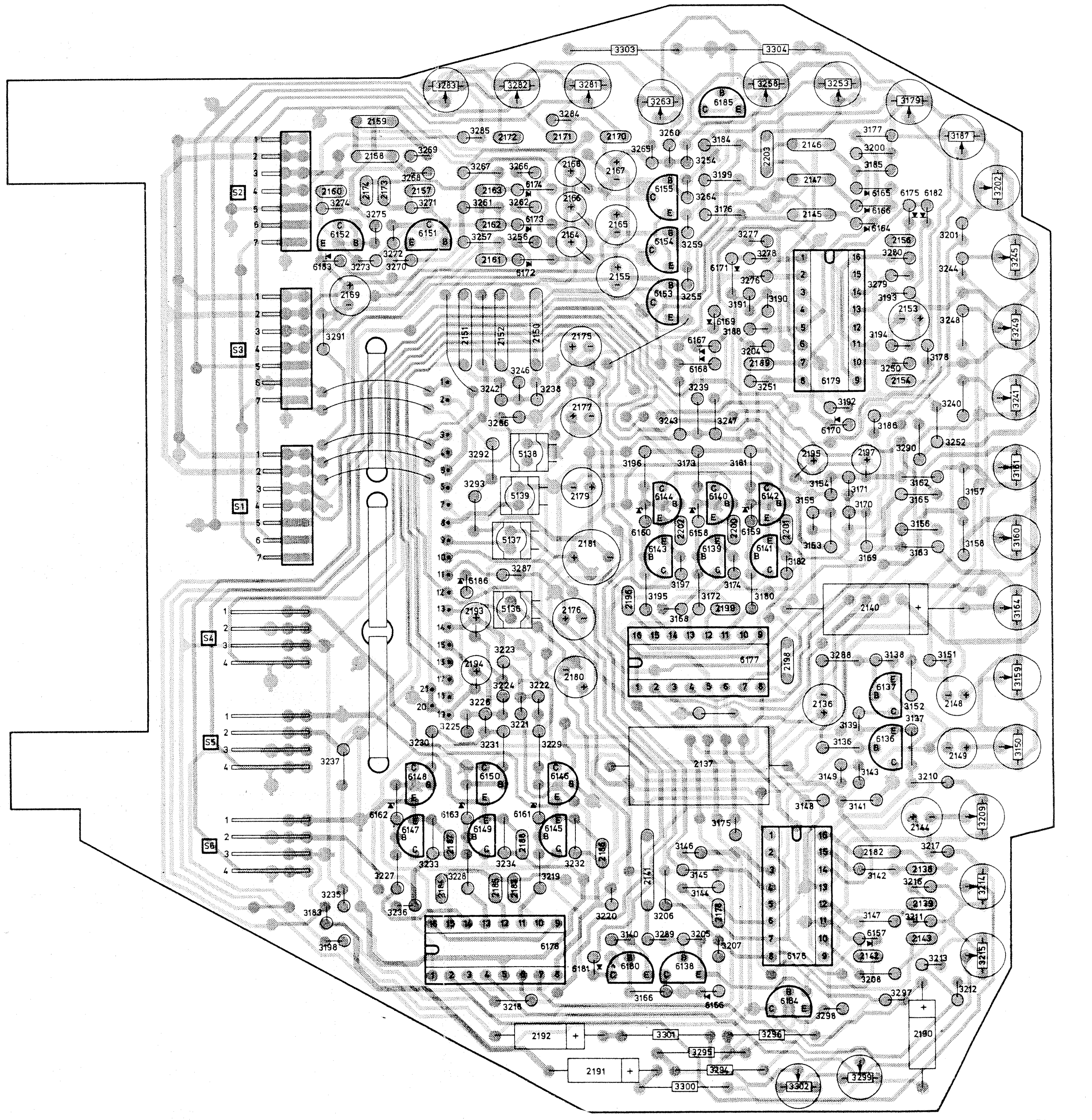


Fig. IV-42

2···	3···	3···	5···	6···	MISC
	3304	3303			
		3281			
	3253	3282			
	3258	3283			
2159	3179	3263			
2170				6185	
2171		3284			
2172	3187	3260			
2146	3177	3285			
2203	3184	3265			
2158	3200	3269			
2168	3254	3266			
2167	3185	3267		6174	
2147	3199	3268		6155	
2163	3202	3262		6175	S2
2173	3264	3261		6182	
2157		3271		6165	
2174	3176	3274		6166	
2160		3275		6164	
2166	3201			6173	
2145	3277	3256		6151	
2165	3259	3257		6152	
2162	3280	3272		6154	
2164	3278	3270		6183	
2156	3245	3273		6171	
2161	3244			6172	
2155	3279	3276			
2169	3193	3255		6153	
	3190	3191			
2153	3248				
2150	3249			6169	
2152	3194	3291			
2151	3188			6167	
2175	3204			6168	S3
	3178				
2189	3250	3246			
				6179	
2154	3251	3238			
	3239	3242			
	3241				
2177	3192	3243			
	3240	3286			
	3186	3247		6170	
	3252				
2195	3290	3292	5138		
2197	3181	3196			
	3161	3173			
	3162				
	3154	3293		6142	
2179	3171		5139	6140	
	3157	3155		6144	S1
	3165	3170		6159	
2201	3156			6158	
2200	3160			6160	
2202	3158	3153	5137	6141	
2181	3163			6139	
	3169	3182		6143	
		3287		6186	
	3174	3197			
		3195			
2196	3180	3172			
2199	3164	3168	5136		
2193					
2176					S4
2140					
		3223			
	3151				
2198	3138			6177	
2194	3288	3222			
2180	3159	3224		6137	
2148		3226			
2136					
	3152	3225			
	3137	3221			
	3139	3229			
	3136	3231		6136	S5
	3150	3230			
2149	3143	3237			
2137	3210			6146	
	3149			6150	
				6148	
				6161	
				6163	
	3141			6162	
2144	3148			6145	
2188	3209			6149	
2187	3175			6147	S6
2186	3146	3232			
2182	3217	3234			
2138	3142	3233			
2141	3145	3219			
2183	3216	3228			
2185	3144	3227			
2184	3214	3235			
2139	3211	3236			
2178	3147	3183			
2143	3205	3206		6157	
2142	3289	3220			
	3207	3140		6178	
	3215	3198		6176	
	3213			6138	
	3208			6180	
	3212			6181	
	3297	3166		6156	
		3218		6184	
	3298				
2190	3296	3301			
2192					
		3295			
2191	3294				
	3299				
	3302	3300			

18849 E

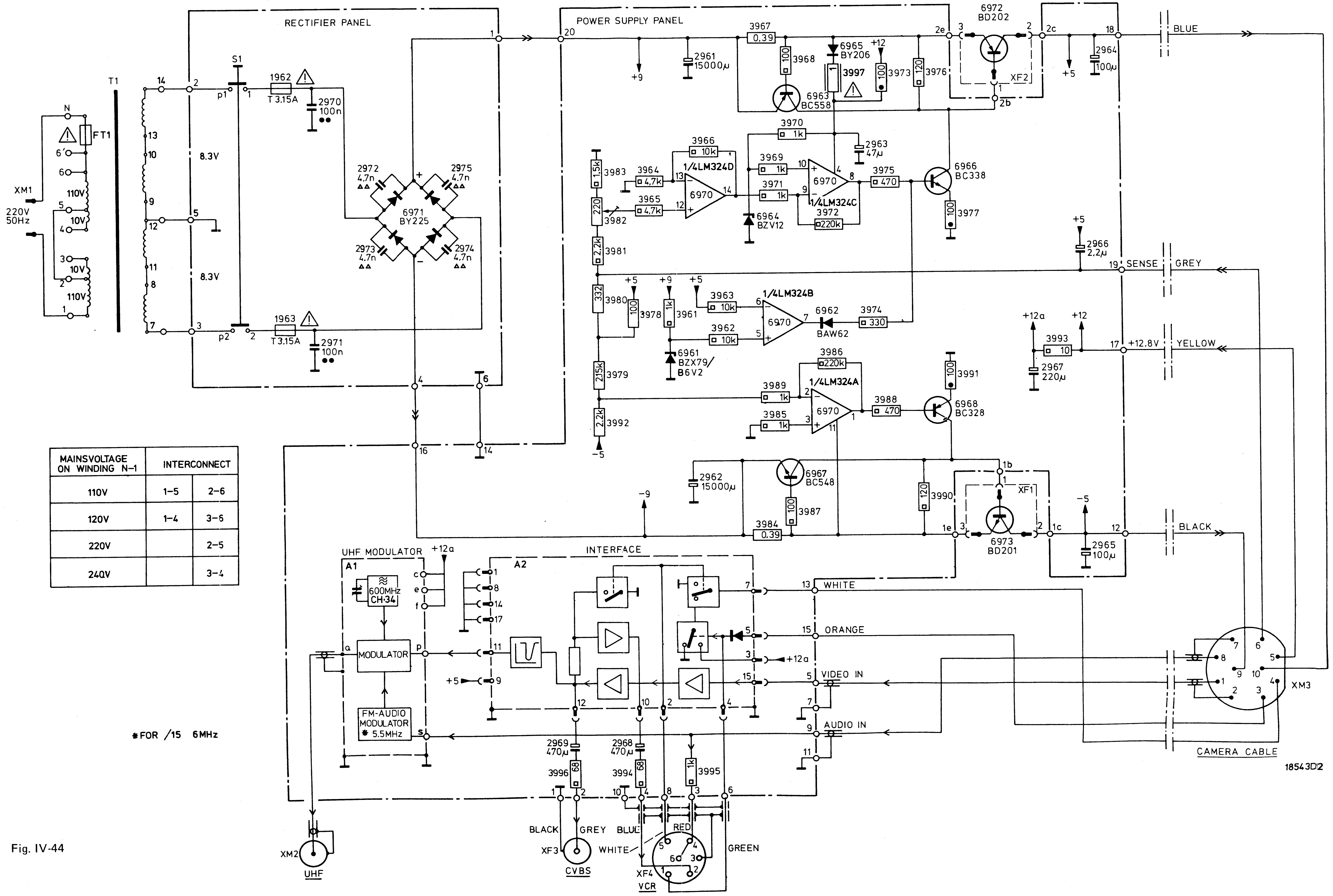


18848 E4

Fig. IV-43

Circuit diagram adapter

2...	2970.2971 2972.2973 2974.2975 2969 2968 2961.2962 2963 2967 2964···2966
3...	3996.3992.3978···3983.3994.3951···3966.3995.3967···3972.3984···3989.3997.3973···3977.3990.3991 3993
6...	6971 6961 6970 6964 6967.6963.6962.6965 6966.6968.6972.6973
MISC.	XM1.FT1 T1 S1 1962.1963.XM2 MODULATOR XF3 INTERFACE XF4 XF2.XF1 XM3


RECTIFIER PANEL
POWER SUPPLY PANEL
T1
S1
XM1
220V 50Hz
N
FT1
110V
10V
8.3V
1962 T3.15A
1963 T3.15A
2970 100n
2971 100n
2972 4.7n
2973 4.7n
2974 4.7n
2975 4.7n
6971 BY225
3967 0.39
2961 15000µ
+9
3968 100
6965 BY206
+12
3997
3973 100
3976 120
6963 BC558
6972 BD202
XF2
2964 100µ
+5
BLUE
3970 1k
2963 47µ
3966 10k
1/4LM324D
6970
3983 1.5k
3964 4.7k
3965 4.7k
3982 220
3969 1k
3971 1k
1/4LM324C
3972 220k
3975 470
6966 BC338
3977 100
6964 BZV12
3981 2.2k
2966 2.2µ
SENSE
GREY
3980 332
3978 100
3961 1k
3963 10k
1/4LM324B
3962 10k
6962 BAW62
3974 330
6961 BZX79/B6V2
+12a
3993 10
2967 220µ
+12.8V
YELLOW
3986 220k
1/4LM324A
3979 215k
3989 1k
3985 1k
3988 470
3991 100
6968 BC328
3992 2.2k
-5
2962 15000µ
6967 BC548
3990 120
3987 100
XF1
-9
3984 0.39
6973 BD201
2965 100µ
BLACK
UHF MODULATOR
A1
600MHz CH-34
MODULATOR
FM-AUDIO MODULATOR * 5.5MHz
INTERFACE
A2
WHITE
ORANGE
VIDEO IN
AUDIO IN
2969 470µ
2968 470µ
3996 68
3994 68
3995 1k
BLACK
GREY
BLUE
RED
WHITE
GREEN
XM2
UHF
XF3
CVBS
XF4
VCR
XM3
CAMERA CABLE
18543D2

MAINSVOLTAGE ON WINDING N–1	INTERCONNECT	
110V	1–5	2–6
120V	1–4	3–6
220V		2–5
240V		3–4

*FOR /15 6MHz

Fig. IV-44

Wiring diagram adapter

MISC	6966.6967.6963.6968.6970.6965.6964.6961.6962.XM2		6972 XF2 A1			6973.A2.XF1.	XF4	XF3 XM3	FT1		S1	T1. XM1.1963.1962.6971
2...	2963	2961		2962		2965	2964. 2966. 2967. 2968. 2969.			2970	2971	2972.2973 2975.2974
3...	3968···3983.3961···3966.3985···3992.3997				3967 3984		3996. 3993···3995.					

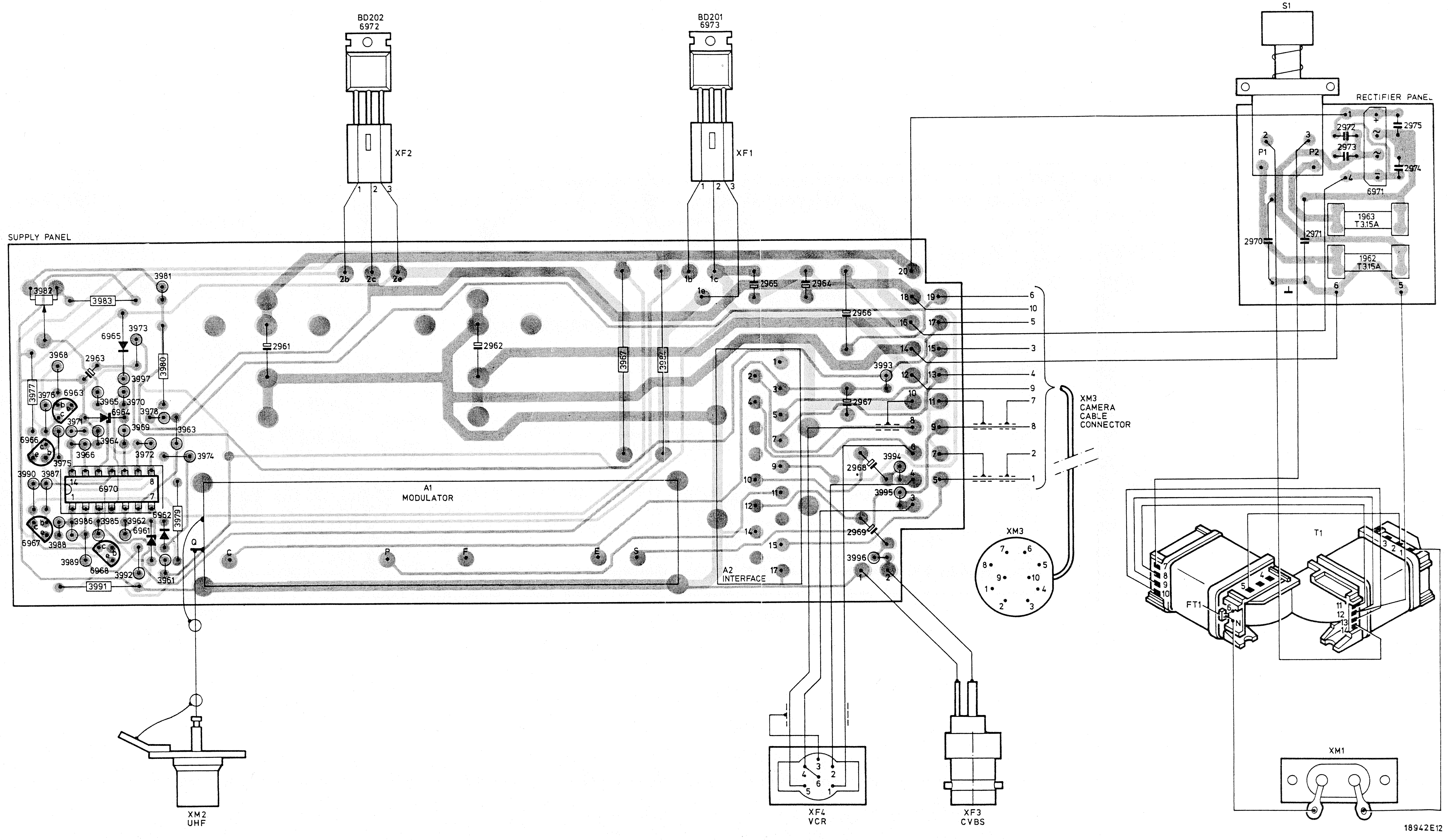

BD202
6972
XF2
1 2 3
BD201
6973
XF1
1 2 3
S1
RECTIFIER PANEL
2972
2973
2975
2974
P1
P2
6971
1963
T3,15A
1962
T3,15A
2970
2971
SUPPLY PANEL
3982
3983
3981
3973
6965
3968
2963
3980
3977
3976
6963
3965
3970
3997
3971
6964
3978
3969
3963
6966
3964
3972
3974
3966
3975
3990
3987
6970
A1
MODULATOR
3986
3985
3962
6961
6962
3979
6967
3988
3989
6968
3992
3961
3991
Q
C
P
F
E
S
2961
2962
3967
3984
2b 2c 2e
1b 1c 1e
2965
2964
2966
2967
2968
2969
3993
3994
3995
3996
A2
INTERFACE
XM3
CAMERA
CABLE
CONNECTOR
6 10 5 3 4 9 7 8 2 1
T1
FT1
XM1
XM2
UHF
XF4
VCR
XF3
CVBS
18942E12

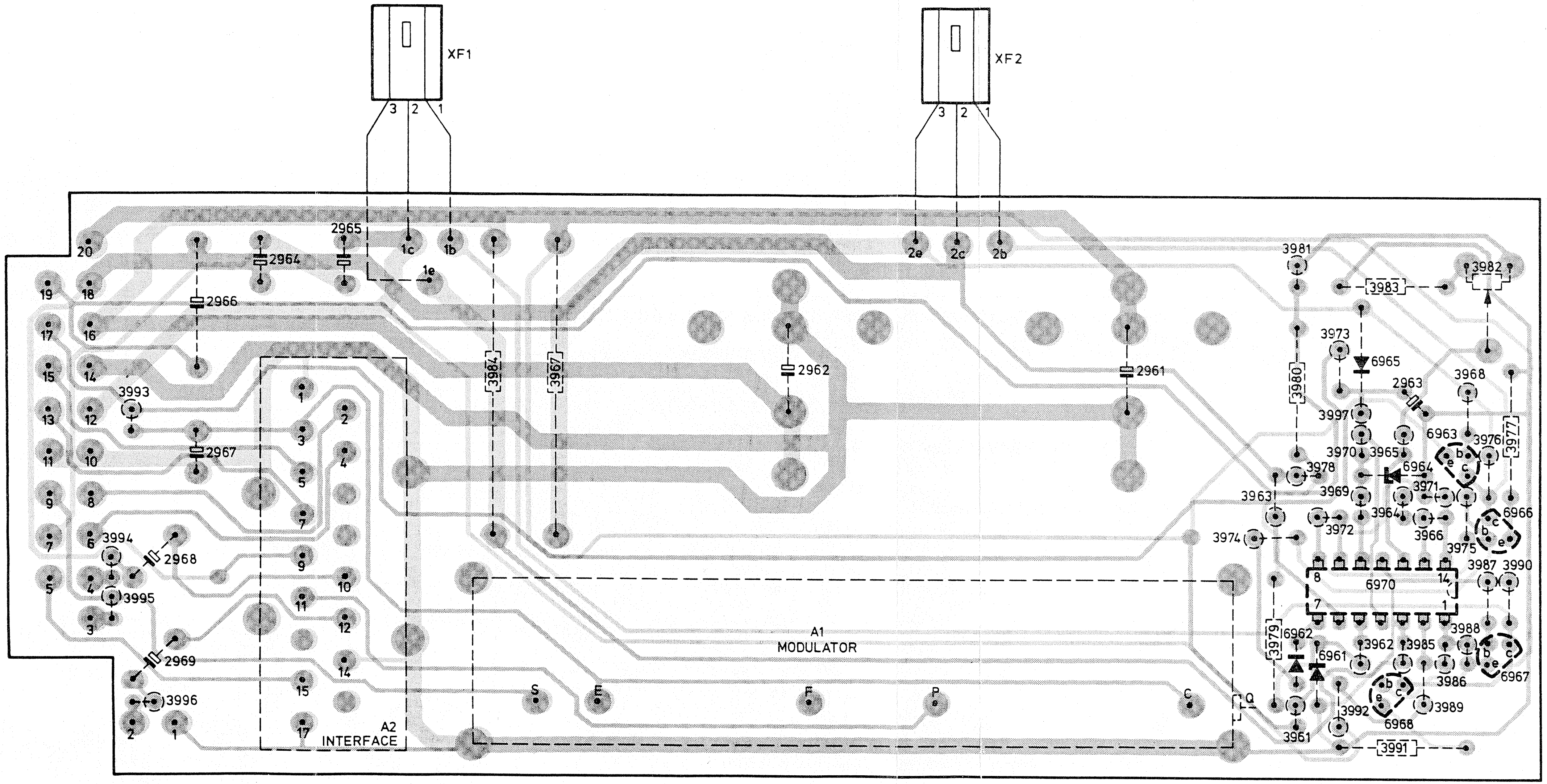
Fig. IV-45

Printed board supply panel

MISC		A2	XF1	A1	XF2	.6962.6961.6965.6964.6970.6968.6963.6967.6966
2...	2968.2969.2966.2967.2964.	2965.		2962	2961	2963
3...	3993···3995.3996.		3984 3967			3997.3985···3992.3968···3983.3961···3966

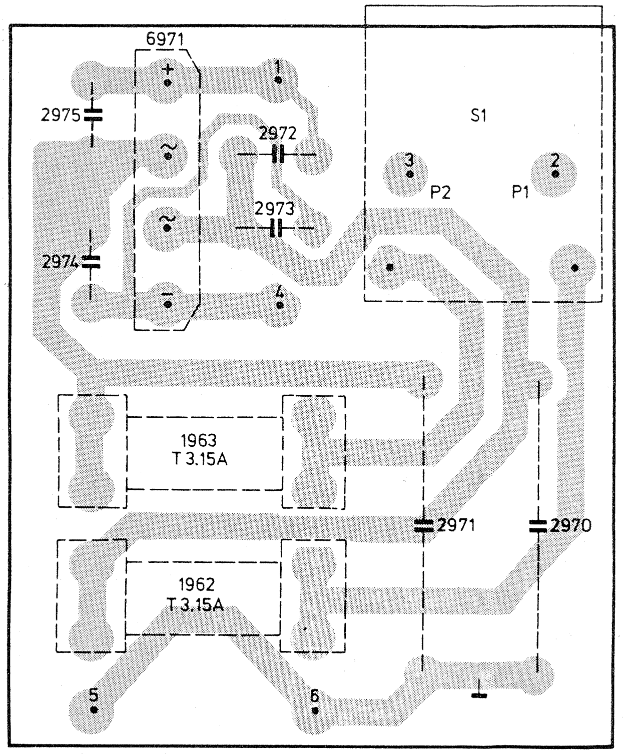
Printed board rectifier panel

MISC.	6971.1962.1963		S1	
2...	2975.2974	2972.2973	2971	2970



XF1
3
2
1
XF2
3
2
1
1c
1b
1e
2e
2c
2b
2965
2964
2966
2967
2968
2969
3993
3994
3995
3996
3984
3967
2962
2961
A1
MODULATOR
A2
INTERFACE
S
E
F
P
C
Q
3981
3982
3983
3973
6965
2963
3968
3980
3997
6963
3976
3977
3970
3965
3978
6964
3963
3969
3971
3964
6966
3974
3972
3966
3975
6970
3987
3990
3979
6962
3962
3985
3988
6961
3986
6967
3992
6968
3989
3961
3991
18943D12

Fig. IV-46



6971
2975
2972
2973
2974
S1
3
2
P2
P1
1
4
1963
T 3.15A
1962
T 3.15A
2971
2970
5
6

18902B12

Fig. IV-47

Exploded view camera

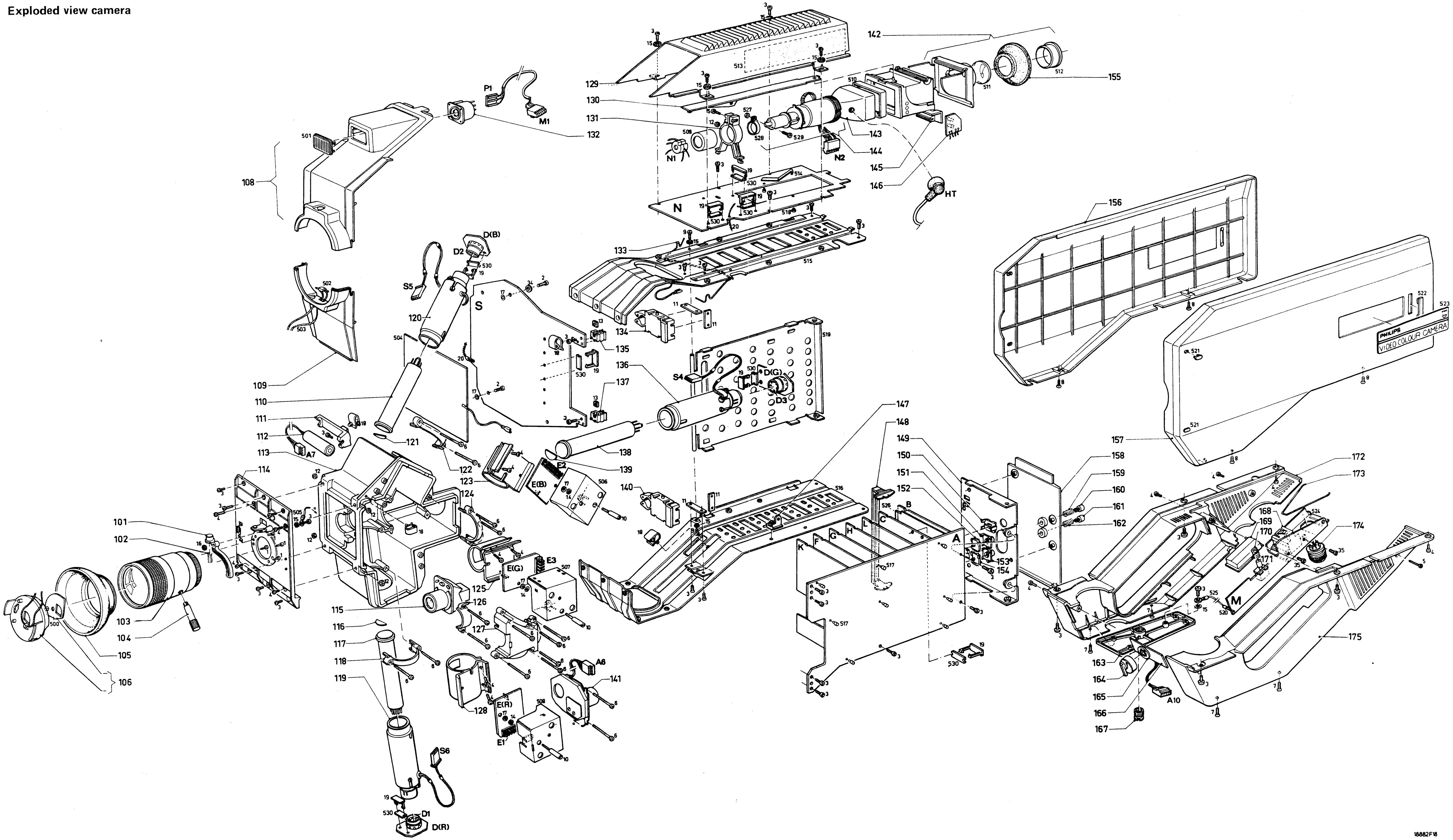

101
102
103
104
105
106
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
P1
M1
N1
N2
N
HT
D(B)
D2
S5
S
S4
D(G)
D3
A7
E2
E(B)
E(G)
E3
E(R)
E1
A6
D1
D(R)
S6
A
B
C
K
F
G
H
L
M
A10
500
501
502
503
504
505
506
507
508
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
PHILIPS
VIDEO COLOUR CAMERA
18882F16

Fig. V-1

Exploded view adapter

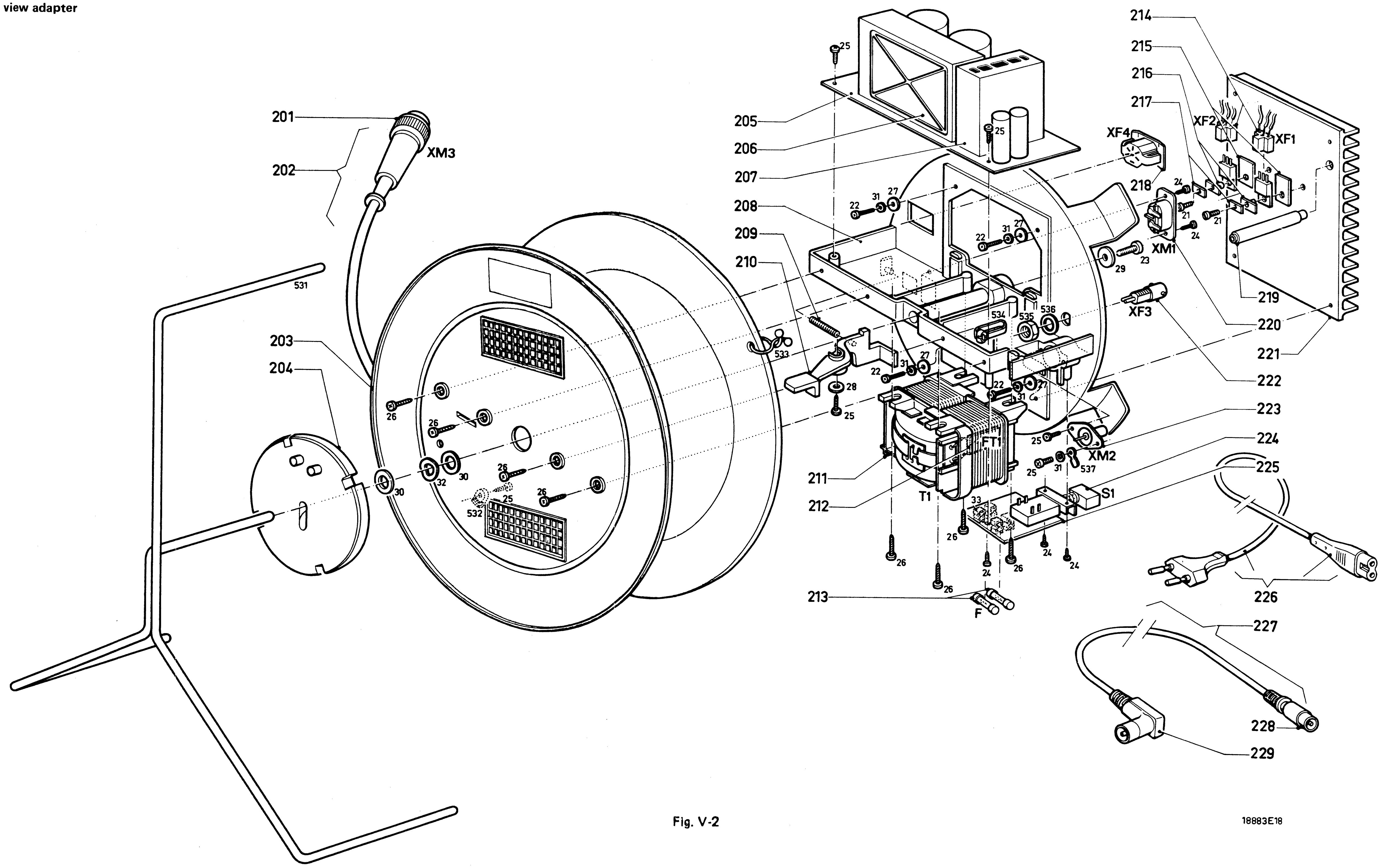

201
XM3
202
531
203
204
26
26
30
32
30
26
25
532
26
533
205
206
207
208
209
210
25
25
22
31
27
22
31
27
534
535
536
22
31
27
22
31
27
28
25
211
212
T1
FT1
33
26
26
26
24
26
24
24
213
F
25
25
31
537
XM2
S1
214
215
216
217
XF2
XF1
XF4
218
24
21
21
24
XM1
29
23
XF3
219
220
221
222
223
224
225
226
227
228
229

Fig. V-2

18883E18

LIST OF MECHANICAL PARTS

FIXING MATERIAL

1	Screw M2x4	5322 815 13367
2	Screw M2.5x4	4822 502 11086
3	Screw M2.5x6	4822 502 10813
4	Screw M2.5x8	4822 502 10909
5	Screw M2.5x15	4822 502 11136
6	Screw M2.5x25	4822 502 11263
7	Screw M2.5x6	4822 502 10815
8	Screw M2.5x8	4822 502 11163
9	Screw 2.2Nx9.5	4822 502 30029
10	Screw	4822 502 11439
11	Nutplate	4822 505 10614
12	Hex. nut M2.5	5322 815 28095
13	Lock nut M2.5	4822 505 10471
14	Lock washer	4822 530 80082
15	Lock washer 2.7	4822 530 80081
16	Retaining ring	4822 530 70114
17	Ring	4822 532 50265
18	Cable clamp	5322 401 14224
19	Cable clamp	4822 401 10705 a.
20	Relief-thread	4822 401 10703
21	Screw M3x10	4822 502 10689
22	Screw M3x16	5322 502 24516
23	Screw M5x8	4822 502 11148
24	Screw 2Nx5/16	4822 502 30191
25	Screw 4Nx3/8	4822 502 30188
26	Screw 6Nx5/8	4822 502 30189
27	Washer 3x9	4822 532 10582
28	Washer 4x12	5322 532 14593
29	Washer 5x15	4822 532 10634
30	Washer 8x15	4822 532 10222
31	Curved washer 3	4822 530 80173
32	Curved washer 8x15	5322 530 84068
33	Clip for fuse	4822 492 60063
34	Insulating washer	5322 532 54018
35	Screw M2.5x6	5322 815 28044

a. In the first few cameras pos. 530 has not been used; codenumber of relevant pos. 19: 4822 401 10627

CAMERA

101	Lever	4822 404 30375
102	Spring	4822 492 51293
103	Zoom lens	4822 381 20041
104	Lever	4822 404 30374
105	Sun cap	4822 462 71159
106	Dia cap (cover)	4822 462 71165
108	Upper frontplate	4822 455 40093
109	Lower frontplate	4822 455 40091
110,117,138	Vidicon	*
111	Batteryholder	4822 256 60222
112	Battery	*
113	R.G.B.-housing	4822 432 90746
114	Lensplate	4822 466 80733
115	Prism	4822 381 20039
116,121,139	Cover tape	4822 466 60808
118,122,124	Bracket	4822 404 50616
119,120,136	Deflection coil	*
123,125,128	Bracket	4822 255 40165
126	Bracket	4822 404 50617
127	Screening bracket	4822 466 70377
129	Viewer cover	4822 462 71156
130	Bracket	4822 455 40092
131	Tube clamp	4822 404 50619
132	Microphone	*
133	Spring	4822 492 40846
134,140	Hinge block	4822 417 50138
135,170	Hinge block	4822 417 50137
141	Diaphragm	*
142	Viewer lens with housing	4822 432 90747
143	Picture tube	*
144	Deflection coil	*
145	Mounting block	4822 464 90072
146	LED-panel	*
147	Bracket	4822 404 50618
148	Printgrip	4822 404 30376
149	Plate	4822 455 40095
150	Service switch	*
151,153	Bracket	4822 462 71157
152	White balance switch	*
154	Registration switch	*
155	Rubber eye piece	4822 450 70038
156	Cover (right)	4822 466 80735
157	Cover (left)	4822 466 80734
158	Backplate	4822 455 40094
159,162	Spring	4822 492 51293
160,161	Button	4822 413 80842
163	Tripod plate	4822 462 10185
164	Knob	4822 413 30843
165	Backlight switch	*
166	Backlight panel	*
167	Reducing nut	5322 506 10017
168	Audio socket	*
169	Knob	4822 404 30377
170	Spring	4822 492 51294
171	Trigger switch	*
172	Handgrip (right)	4822 498 10106
173	Spring	4822 492 40845
174	Camera connector	*
175	Handgrip (left)	4822 498 10107

ADAPTER

201	Camera cable connector XM3	*
202	Camera connecting cable +XM3	*
203	Reel	4822 528 10369
204	Blocking disc	4822 466 90909
205	Supply panel	*
206	Modulator	*
207	Interface	*
208	Frame	4822 464 90073
209	Spring	4822 492 51296
210	Blocking arm	4822 404 60132
211	Mains transformer T1	*
212	Temperature fuse FT1	*
213	Fuse F	*
214	Transistor socket XF1, XF2	*
215	Insulating plate	4822 255 40161
216	Insulating bush	4822 255 40174
217	Insulating plate	4822 255 40173
218	Connector XF4	*
219	Pipe	4822 532 40117
220	Mains inlet XM1	*
221	Heatsink	4822 255 40172
222	BNC connector XF3	*
223	UHF connector XM2	*
224	Main switch S1	*
225	Rectifier panel	*
226	Mains cord	*
227	UHF cable with connectors	*
228	UHF connector male	*
229	UHF connector female	*

SERVICE AIDS

Set of extension printed boards	4822 263 70121
Jig for vidicon cover	4822 395 80153
4 mm Allen key for screw pos. 23	4822 395 50014

T.V.-Test charts 3922 986 44151 to be ordered from documentation dept. of Concern Service

* For service codenumbers, see list of electrical parts

LIST OF ELECTRICAL PARTS

CAMERA

Panel A	Carrier	4822 212 50106
Panel B	Registration- and white balance	4822 212 50096
Panel C	DC-DC converter	4822 212 50092
Panel D (B)	Tube socket B	4822 212 50099
Panel D (R)	Tube socket R	4822 212 50099
Panel D (G)	Tube socket G	4822 212 50101
Panel E (B)	Pre-amplifier B	4822 212 50103
Panel E (R)	Pre-amplifier R	4822 212 50102
Panel E (G)	Pre-amplifier G	4822 212 50102
Panel F	Video processor 1	4822 212 50089
Panel G	Video processor 2	4822 212 50091
Panel H	PAL-encoder	4822 212 50097
Panel K	Dark current	4822 212 50094
Panel L	Pulse generator	4822 212 50095
Panel M	Microphone amplifier	4822 212 50098
Panel N	Viewfinder	4822 212 50107
Panel S	Deflection	4822 212 50093

Backlight compensation panel	4822 212 50104
LED-panel	4822 212 50105
Vidicon tube XQ1272	4822 131 90054
Picture tube 40CB4	4822 131 20041
Tube socket vidicon D1, D2, D3	5322 255 74007
Tube socket picture tube N1	5322 255 74026
Deflection coil of vidicon tube	4822 158 10448
Deflection coil of picture tube*	4822 150 10121
* Coil without connector	5322 150 14027
Diaphragm	4822 525 10079
Battery	4822 138 10028
Microphone	4822 242 30082
Audio socket	4822 267 40288
Camera connector 10-pole	4822 265 30189

Trigger switch	4822 273 10081
Backlight compensation- and sensitivity switch	4822 273 30245
Registration switch	4822 276 10717
White balance switch	4822 276 10717
Service switch	4822 273 30206

I.C.-Holders

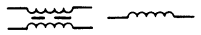
Quil 8p	4822 255 40147
Quil 14p	4822 255 40136
Quil 16p	5322 255 44185
Dil 8p	4822 255 40164
Dil 14p	5322 267 54064
Dil 16p	5322 267 54104
Dil 16p low	4822 255 40163

I.C.'s

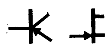
HEF4053BP	5322 209 14121
HEF4066BP	5322 209 14104
HEF4520BP	5322 209 14189
LM224N	5322 209 85753
MC1458N	5322 209 85512
OQ5501	4822 209 80435
SN74LS00N	5322 209 84823
SN74LS04N	5322 209 85486
SN74LS08N	5322 209 84995
SN74LS32N	5322 209 85311
SN74LS74N	5322 209 84986
SN74LS221N	5322 209 86059
TCA220	5322 209 84386
TCA240	5322 209 84695
TDA1002A	4822 209 80431
TDA1500	4822 209 80603
TDA1501	4822 209 80604
TDA2810	4822 209 80601
UAD1020	5322 209 85949

Tripler	4822 218 20119

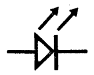
Crystal 4.43 MHz	4822 242 70309
Crystal 5 MHz	4822 242 70315



Transformer (in DC/DC converter)	4822 140 10168
Delay line 350 n.sec.	4822 320 40046
Coils	
3.7 µH	4822 158 10461
5.8 µH	4822 158 10459
8.5 µH	4822 158 10462
15 µH	4822 158 10451
25 µH	4822 158 10449
33 µH	4822 158 10452
47 µH	4822 158 10453
68 µH	4822 158 10457
2x84 µH	4822 158 10463
100 µH	4822 158 10458
330 µH	4822 158 10454
385 µH	4822 158 10464
470 µH	4822 158 10455
680 µH	4822 158 10456
1450 µH	4822 158 10465



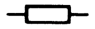
BC264C	5322 130 44476
BC327	4822 130 40854
BC328-25	4822 130 40988
BC338	4822 130 44121
BC338-25	4822 130 40958
BC547B	4822 130 40959
BC548B	4822 130 40937
BC556	4822 130 40989
BC558B	4822 130 44197
BF245	4822 130 20051
BF245A	5322 130 44499
BF245B	4822 130 41024
BF324	5322 130 44396
BF422	4822 130 41084
BF423	4822 130 41106
BF450	5322 130 44237
BF494	4822 130 44195
BSV78	5322 130 44093
BSW68	5322 130 44788
BU407	4822 130 41085



CQY54 (red)	4822 130 30914
CQY95 (green)	4822 130 30923

AAZ18	4822 130 30084
BA316	4822 130 30302
BA317	4822 130 30847
BAV10	4822 130 30594
BAV19	4822 130 30967
BAW62	4822 130 30613
BY206 (may be BYV95B)	4822 130 30839
BY207 (may be BYV95C)	4822 130 30868
BY208-800	4822 130 30956
BY409 (may be BY509)	5322 130 34594
BY509	4822 130 41485
BYV95B	4822 130 41486
BYV95C	4822 130 41487
BZV46C1V5	4822 130 31279
BZX75C1V4 (may be BZV46C1V5)	4822 130 34047
BZX75C2V1	4822 130 34049
BZX79C39	5322 130 34145
BZX79C47	4822 130 34383
BZY88C3V3	5322 130 30392
BZY88C3V9	5322 130 30411
BZY88C5V6	4822 130 34173
OA90	4822 130 30219

100 Ω	4822 105 10378
220 Ω	4822 105 10379
330 Ω	4822 100 20054
470 Ω	4822 100 10023
1 kΩ	4822 100 10021
2.2 kΩ (3126)	4822 100 10029
2.2 kΩ	4822 105 10381
4.7 kΩ (3039, 3040, 3041, 3673)	4822 100 10236
4.7 kΩ	4822 105 10383
22 kΩ	4822 105 10382
220 kΩ	5322 101 14109
470 kΩ (3339, 3341, 3343)	5322 101 14144
470 kΩ (3779)	4822 100 10107
470 kΩ	4822 105 10384
1 MΩ	4822 100 10103



ERD18T 0.125 W carbon film resistor

22 Ω	5322 116 50983
47 Ω	5322 116 50952
470 Ω	5322 116 54007
1.5 kΩ	5322 116 50415
1.8 kΩ	5322 116 54568
3.3 kΩ	5322 116 55106
4.7 kΩ	5322 116 54008
5.6 kΩ	5322 116 54011
6.8 kΩ	5322 116 54012
10 kΩ	5322 116 54619
15 kΩ	5322 116 54001
39 kΩ	5322 116 54664
56 kΩ	5322 116 54676
100 kΩ	5322 116 54696
220 kΩ	5322 116 54038

CR16 0.2 W carbon resistor

330 kΩ	4822 111 30257
560 kΩ	5322 111 30261
820 kΩ	4822 111 30099

SR25 0.33 W safety resistor

10 Ω	4822 111 30405
18 Ω	4822 111 30407
22 Ω	4822 111 30416
47 Ω	4822 111 30431
100 Ω	4822 111 30343

MR25 0.33 W metal film resistor

9.1 Ω	5322 116 50863
11 Ω	5322 116 54059
110 Ω	5322 116 54474
130 Ω	5322 116 54481
220 Ω	5322 116 54002
261 Ω	5322 116 54502
267 Ω	5322 116 54503
270 Ω	5322 116 54503
332 Ω	5322 116 54513
360 Ω	5322 116 50603
560 Ω	5322 116 54009
604 Ω	5322 116 54528
649 Ω	5322 116 54532
680 Ω	5322 116 54534
681 Ω	5322 116 54534
698 Ω	5322 116 54037
715 Ω	5322 116 50571
750 Ω	5322 116 54536
820 Ω	5322 116 54541
1 kΩ	5322 116 54549
1.07 kΩ	5322 116 54553
1.1 kΩ	5322 116 54554
1.18 kΩ	5322 116 54556
1.3 kΩ	5322 116 50526
1.5 kΩ	5322 116 54564
2 kΩ	5322 116 54572
2.1 kΩ	5322 116 54573
2.43 kΩ	5322 116 54004
2.87 kΩ	5322 116 50414
3.74 kΩ	5322 116 54588
3.9 kΩ	5322 116 54591
4.02 kΩ	5322 116 54592
4.42 kΩ	5322 116 50556
5.49 kΩ	5322 116 54598
5.76 kΩ	5322 116 54599
6.81 kΩ	5322 116 54012
8.25 kΩ	5322 116 54558
8.45 kΩ	5322 116 54612
15.4 kΩ	5322 116 50479
18 kΩ	5322 116 54638
24 kΩ	5322 116 54647
24.9 kΩ	5322 116 54648
27 kΩ	5322 116 54652
33 kΩ	5322 116 50482
39 kΩ	5322 116 54664
40.2 kΩ	5322 116 54665
45.3 kΩ	5322 116 54669
47 kΩ	5322 116 54671
562 kΩ	4822 116 51169

MR30 0.5 W metal film resistor

750 kΩ	5322 116 54335
1 MΩ	5322 116 54188

Resistor 0.5 W 2 % (in pre-amplifiers)

2.7 MΩ	4822 111 50409
3.9 MΩ	4822 111 50411

1 µF - 50 V	4822 124 40242
1 µF - 63 V	4822 124 40242
2.2 µF - 63 V	4822 124 40244
2.2 µF - 100 V	4822 124 20737
3.3 µF - 63 V	4822 124 40245
4.7 µF - 35 V	4822 124 40221
4.7 µF - 63 V	4822 124 40246
10 µF - 16 V	4822 124 40187
10 µF - 25 V	4822 124 20697
10 µF - 35 V	4822 124 40222
15 µF - 10 V	5322 124 14036
15 µF - 16 V	4822 124 20687
22 µF - 10 V	4822 124 40176
22 µF - 50 V	4822 124 40232
33 µF - 6.3 V	4822 124 20669
33 µF - 10 V	4822 124 40272
47 µF - 10 V	4822 124 40177
47 µF - 16 V	4822 124 40192
68 µF - 6.3 V	4822 124 20453
100 µF - 10 V	4822 124 40178
100 µF - 16 V	4822 124 40194
100 µF - 25 V	4822 124 20701
150 µF - 6.3 V	4822 124 20454
150 µF - 16 V	5322 124 24197
220 µF - 6.3 V	4822 124 40167

Trimmer capacitor 10 pF	4822 125 50062
Trimmer capacitor 22 pF	4822 125 50045

Flatfoil polyester capacitor

10 nF - 250 V	4822 121 41134
47 nF - 250 V	4822 121 41221

Polysterene capacitor

6.8 nF - 63 V	4822 121 50538

Polypropylene capacitor

3.3 nF - 63 V	4822 121 41218

Ceramic plate capacitor

3.3 nF - 50 V	4822 122 31392
180 nF - 50 V	4822 122 31391

Print connectors (minimatch)

Male :	4 positions	4822 266 30138
	5 positions	4822 266 30139
	6 positions	4822 266 40062
	7 positions (incl. A11)	4822 266 40063
	8 positions	4822 266 40064
	9 positions	4822 266 40065
	10 positions	4822 266 40066
	11 positions	4822 266 40067
	20 positions	4822 265 40147
Female:	4 positions	4822 266 30141
	5 positions	4822 266 30142
	6 positions	4822 266 40068
	7 positions	4822 266 40069
	8 positions	4822 266 40071
	9 positions	4822 266 40072
	10 positions	4822 266 40073
	11 positions	4822 266 40074
	20 positions	4822 267 60078

Cable-connectors printpart (minimatch)

Male:	3 positions A7	4822 265 30195
	4 positions A6, N3	4822 265 30191
	4 positions A10	4822 265 30192
	4 positions S4, S5, S6	4822 265 30197
	5 positions M1	4822 265 30193
	5 positions M3	4822 265 30196
	5 positions N2	4822 265 30194
	7 positions A5	4822 265 40149
	7 positions M2	4822 265 40151
	7 positions S1, S2, S3	4822 265 40157
	9 positions A1,A2,A3	4822 265 40155
	9 positions E1,E2,E3	4822 265 40156
	14 positions A4	4822 265 40152
	16 positions A8	4822 265 40153
	16 positions A9	4822 265 40154

Cable-connectors cable part (minimatch)

Female:	3 positions A7	4822 267 40366
	4 positions A6,A10,N3, S4,S5,S6*	4822 267 40359
	5 positions M1,M3,N2	4822 267 40367
	7 positions A5,M2,S1,S2,S3	4822 267 50294
	9 positions A1,A2,A3 E1,E2,E3	4822 267 50295
	14 positions A4	4822 267 50296
	16 positions A8,A9	4822 267 50297

* For the first 500 camera's "Cis"-connectors have been used for S4, S5, S6:

Housing	4822 268 40094
Spring	4822 268 20077

CHAPTER III

Page		Fig.
III-1...4	Service adjustments	
III-1	RGB unit adjustments	III-1
III-2	Deflection adjustments	III-2
III-2	Pre-amplifier adjustments	III-3
III-3	Carrier adjustments	III-4
III-4	Viewfinder adjustments	III-5

SERVICE ADJUSTMENTS

GENERAL

- Colour temperature of the scene illumination approx. 3200°C.
- Place the closed lens cap onto the camera.
- Remove the dark-current board. Interconnect Vt and +32 (points 13 and 14 of the dark-current board).
- Set service switch S3 on the reg. and wh-b board to the service position.
- Interrupt the iris control loop. (If the camera has a manual iris control, turn it clockwise in position Manual; if not, disconnect iris connector A6 from the master board and adjust the iris aperture with an injection current).
- Mount a 2-dioptre close-up lens.
- A set of test charts is available under code no. 3922 986 44151 from Techn. Service Publications of the Concern Service dept.

1. Adjusting the supply voltage

Measure the +5 supply voltage. Adjust this voltage to 5 V ± 0.1 V with 3982 of the adapter. Now check the voltage between +5 and –5; this voltage should be 10 V ± 0.3 V.

2. Adjusting the beam current (see Fig. III-2)

Remove the lens cap; open the iris injection current 1.2 mA. Place a 100-W Argenta lamp in front of the camera, F = 8 and focus ~. Switch on the lamp for max. 10 secs. Adjust the output of the preamplifier in the red channel to 260 mVp-p ± 10 % by means of 3253. Adjust the output of the preamplifier in the green channel to 260 mVp-p ± 10 % by means of 3263. Adjust the output of the preamplifier in the blue channel to 380 mVp-p ± 10 % by means of 3258.

Note:
If one of the outputs cannot be obtained, the target voltage for the relevant tube may be slightly increased.

3. Adjusting the RGB unit (see Fig. III-1)

Note:
It is advised to keep the illumination level so low that with fully open iris the R, G and B outputs remain just below 1 Vp-p. As a result of this the depth of focus is minimal, which will facilitate the adjustments.
The RGB subtractor is connected to service connector A11 and the focus wobble signal is applied to junction 3285/3283.
Place the resolution test chart in front of the camera.

a. Adjusting the green tube.
Loosen screws 10, 9 and 3.
Set the distance range to ~ and the variator to position 64 mm.
Switch the monitor to the green output signal.
Place the camera at such a distance from the test chart that the monitor picture is as sharp as possible.
Now adjust 3281 (FOCUS G) on the deflection board until the focussing of the picture on the monitor is optimal.
Set the variator to position 8 mm.
Now optimise the focussing of the picture by shifting the tube and deflection. When doing so, check that the horizontal position of the picture is not disturbed.
Now switch on the focus wobble and adjust the alignment rings so that the centre of the picture is stationary and the corners move with the same amplitude. Switch off the focus wobble and check the sharpness at f = ~ and F = 8 mm.
If necessary, repeat the above adjustment. Then tighten screws 10, 9 and 3 in this order.

b. Adjusting the red tube
Set the range to ~ and the variator to F = 64 mm.
Switch the monitor to the red outputsignal.
Optimise the picture sharpness with 3282 (FOCUS R) on the deflection board. Then loosen screws 8, 7 and 1.
Set the variator to F = 8 mm and shift the tube and deflection until the focussing of the picture is optimum.
Switch on the focus wobble and adjust the alignment rings so that the centre of the picture is stationary and the corners move with the same amplitude.
Switch off the focus wobble and check the picture sharpness.
If necessary, repeat the above adjustment. Then tighten screws 8, 7, 1 in this order.

c. Adjusting the blue tube
Set the range to ~ and the variator to F = 64 mm.
Switch the monitor to the blue outputsignal.
Adjust for optimum focussing of the picture with 3283 (FOCUS B) on the deflection board.
Loosen screws 12, 11, 5.
Set the variator to F = 8 mm, and shift the tube with deflection unit to and fro so that the picture focussing is optimum. Then switch on the focus wobble. Now adjust the alignment rings so that the centre of the picture is stationary and the corners move with the same amplitude. Switch off the focus wobble and check the picture sharpness. If necessary, repeat the above adjustment. Subsequently, tighten screws 12, 11 and 5 in this sequence.

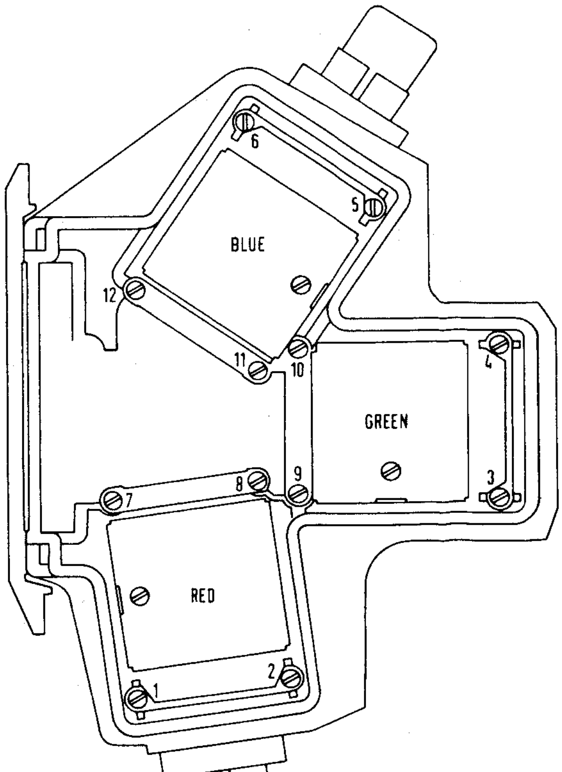


Fig. III-1

4. Scan amplitude and position (see Fig. III-2)

Note:

Open the iris aperture completely by means of an injection current of 1,2 mA and make the scene illumination so that a non-saturated picture is obtained.

Connect the oscilloscope across 3238. Now adjust 3209 (Ampl. RGB) so that the voltage across 3238 is 1.0 Vp-p. Subsequently, adjust 3241 (H shift G) so that there is no d.c. component in the signal (no shift of the waveform on the oscilloscope when switching from DC to AC).

Now connect the oscilloscope across 3176. Adjust 3179 (V-shift G) so that no d.c. component appears in the signal (picture not shifted when switching over from DC to AC).

Now adjust 3164 (V. ampl. RGB) so that the test circle is round.

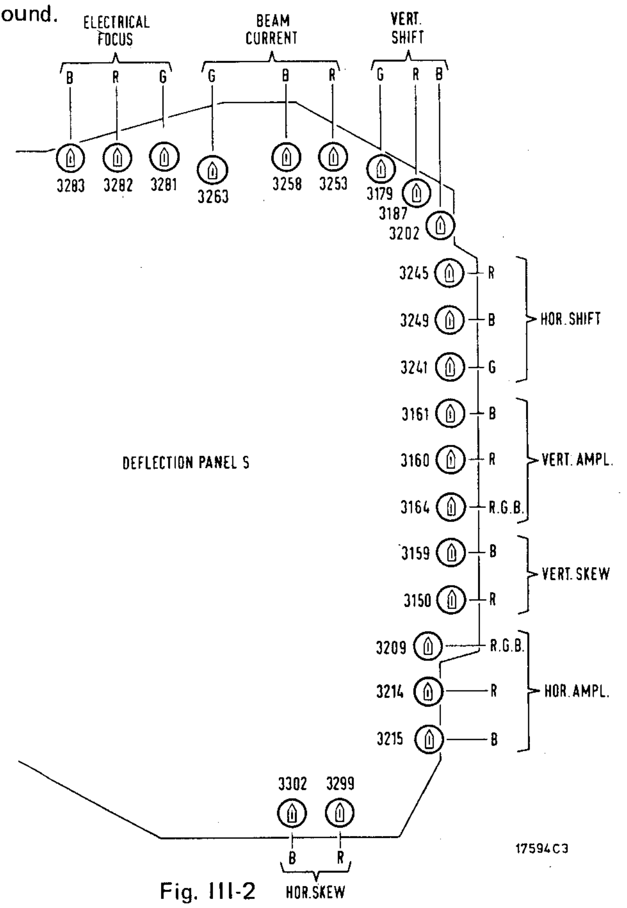

ELECTRICAL FOCUS
B
R
G
BEAM CURRENT
G
B
R
VERT. SHIFT
G
R
B
3283
3282
3281
3263
3258
3253
3179
3187
3202
3245
R
3249
B
3241
G
HOR. SHIFT
3161
B
3160
R
3164
R.G.B.
VERT. AMPL.
DEFLECTION PANEL S
3159
B
3150
R
VERT. SKEW
3209
R.G.B.
3214
R
3215
B
HOR. AMPL.
3302
3299
B
R
HOR.SKEW
17594C3

Fig. III-2

5. Registration (see Fig. III-2)

Note:

For the camera registration the green signal is used as reference. However, if the green deflection is misaligned, first carry out adjustment 4.

Register red on green, proceeding as follows.

Select the G-R signal on the monitor.

a. Position the centre of the red picture on the centre of the green picture with 3187 (V. shift R) and 3245 (H. shift R).
b. Make the horizontal red and green lines at the top and bottom coincide with 3160 (V. Ampl. R).
c. Register the red vertical lines at the left and right with the green ones with 3214 (H. Ampl. R).
d. Correct the vertical skew with 3150 (V. Skew R).
e. Correct the horizontal skew with 3299 (H. Skew R).

Note:

For an optimum registration it may be necessary to repeat procedures a through **e**.

Now register blue on green, proceeding as follows:

Select the G-B signal on the monitor.

a. Position the centre of the blue picture on the centre of the green picture with 3202 (V. Shift B) and 3249 (H. Shift B).
b. Make the horizontal lines at the top and bottom coincide with 3161 (V. Ampl. B).
c. Make the vertical lines at the left and right coincide with 3215 (H. Ampl. B).
d. Correct the vertical skew with 3159 (V. Skew B).
e. Correct the horizontal skew with 3302 (H. Skew B).

Note:

For an optimum registration it may be necessary to repeat procedures a through **e**.

6. Adjusting the maximum target voltage (see Fig. III-3)

Note:

This adjustment should be effected at an increased target temperature. For this purpose the camera should be left switched on with closed side covers for approx. 2 hours. As a result of this the target temperature will become approx. 8 degrees Centigrade higher than the ambient temperature.

Trigger the oscilloscope externally with the trigger signal from the substractor board. Adjust the horizontal time base so that two to six lines are displayed on the screen. Fit the closed lens hood onto the camera . Measure the ambient temperature as accurately as possible.

Now adjust the respective output voltages of the preamplifiers in accordance with the following list by means of 3779 on the relevant preamplifier.

T amb.	19	20	21	22	23	24	25	26	27	28	°C
Output R-G	5,4	6,0	6,7	7,4	8,2	10	11	12,1	13,3	14,7	mV
Output B	7,8	8,6	9,5	10,5	11,6	12,7	14,0	15,4	16,9	18,7	mV

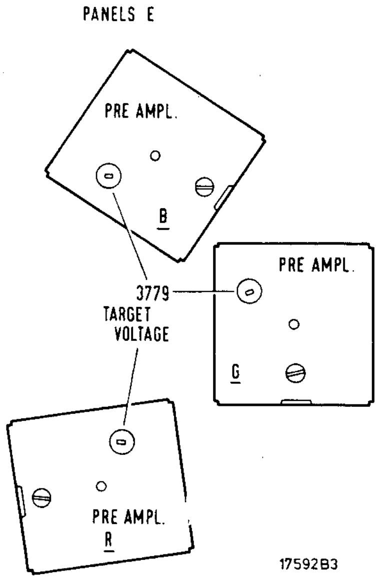

PANELS E
PRE AMPL.
B
PRE AMPL.
3779
TARGET VOLTAGE
G
PRE AMPL.
R
17592B3

Fig. III-3

7. Dark current and black level

Interrupt the connection between +32 V and Vt and reset the dark-current board; set the 6-dB switch to 0. Connect the oscilloscope to point 5A11.

a. Adjust the black level to 100 mV above the blanking level by means of 3040.
b. Set the 6 dB switch to 4 and adjust the dark-current level to 100 mV with 3341. Set the 6 dB switch back to position 0; check the result and, if necessary, repeat **a** and **b**.
c. Now minimize the black level with 3040.
d. Adjust the signal on 6A11 to 100 mV above the blanking level with 3039.
e. Set the 6 dB switch to 4 and adjust the signal to 100 mV with 3339. Subsequently, set the 6 dB switch to 0; check the result and, if necessary, repeat **d** and **e**.
f. Adjust the black level on 6A11 to minimum with 3039.
g. Adjust the signal on 7A11 to 100 mV above the blanking level with 3041
h. Set the 6 dB switch to 4 and adjust 3343 so that the signal level on 1A11 is again 100 mV. Then set the 6 dB switch to 0 and, if necessary, repeat **g** and **h**.
i. Minimize the signal on 7A11 with 3041.

8. Gamma tracking

Adjust the diaphragma injection current to 0.7 mA (f = 5.6).
Set the gamma potentiometers 3887 (R), 3901 (B) and 3893 (G) to linear (fully anti-clockwise).
Illuminate the scene so that output G (point 5A11) is 1 Vp-p ± 5 %.

a. Now turn gamma potentiometer 3893 fully clockwise; adjust the tracking potentiometer 3870 so that the output on point 5A11 is again 1 Vp-p.
b. Now measure the red output signal on 6A11. Turn gamma potentiometer 3887 fully clockwise. Now adjust tracking potentiometer 3859 so that the output becomes equal to the original value.
c. Now measure the output of the blue channel on 7A11. Turn the gamma potentiometer 3901 fully clockwise. Restore the output to the original value with tracking potentiometer 3880.

9. Gamma

a. Use the gamma test chart for this adjustment. Illuminate the scene so that the green output (5A11) is 1 Vp-p ± 5 % for the white block (100 %).
Check the black level for the green channel by means of the "black holes" in the test chart. If necessary, adjust with 3040 on video processor 1.
Now adjust gamma potentiometer 3893 so that the brightness of block 6 is 35 %.
b. By means of 3025 adjust the amplitude for red (6A11) to 1 Vp-p ± 5 % for the white block. Now adjust 3887 on the Proc. II board so that block 6 yields 35 % amplitude.
c. Now adjust the blue amplitude (7A11) to 1 Vp-p ± 5 % for the white block by means of 3027.
Then adjust 3901 so that block 6 yields 35 % amplitude.

10. Sensitivity

Place a white surface in front of the camera, which at a distance of approx. 50 cm is illuminated by a 75-W Argenta lamp.
Place the camera so that the entire picture is white.
Open the iris completely (1.2 mA injection current).
Now adjust the green output signal on point 5A11 to 1 Vp-p ± 5 % with potentiometer 3026 on the Proc. I board.
In a similar way adjust the amplitude of the red signal on 6A11 to 1 Vp-p ± 5 % with potentiometer 3025 and adjust the amplitude of the blue signal on 7A11 to 1 Vp-p ± 5 % with potentiometer 3027.

11. Diaphragm

Connect the diaphragm to its control loop. (If the camera features manual control select position "automatic").
Set service switch S3 on the registration and white-balance board to "automatic". Now adjust the signal on 5A11 to 1 Vp-p ± 5 % with potentiometer 3911 (iris).

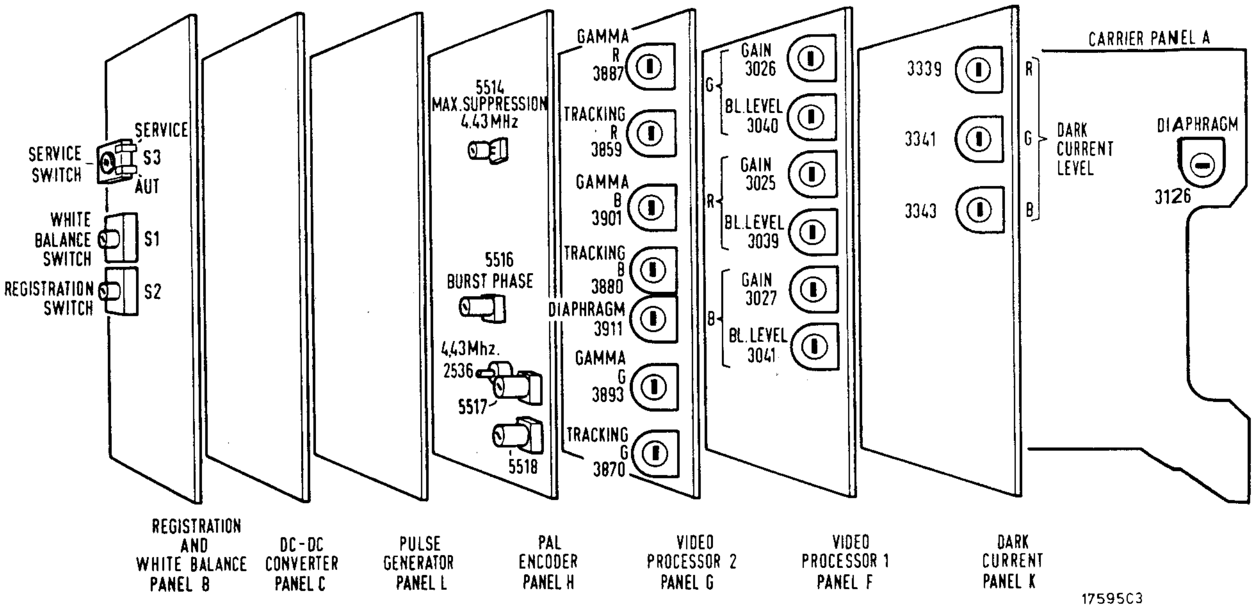

SERVICE SWITCH
SERVICE
S3
AUT
WHITE BALANCE SWITCH
S1
REGISTRATION SWITCH
S2
5514
MAX.SUPPRESSION
4.43MHz
5516
BURST PHASE
4.43Mhz.
2536
5517
5518
GAMMA R 3887
TRACKING R 3859
GAMMA B 3901
TRACKING B 3880
DIAPHRAGM 3911
GAMMA G 3893
TRACKING G 3870
G
GAIN 3026
BL.LEVEL 3040
R
GAIN 3025
BL.LEVEL 3039
B
GAIN 3027
BL.LEVEL 3041
3339
3341
3343
R
G
B
DARK CURRENT LEVEL
CARRIER PANEL A
DIAPHRAGM
3126
REGISTRATION AND WHITE BALANCE PANEL B
DC-DC CONVERTER PANEL C
PULSE GENERATOR PANEL L
PAL ENCODER PANEL H
VIDEO PROCESSOR 2 PANEL G
VIDEO PROCESSOR 1 PANEL F
DARK CURRENT PANEL K
17595C3

Fig. III-4

12. Viewfinder geometry (see Fig. III-5)

Place a test chart in front of the camera and adjust the lens so that the edges of the test chart just touch the edges of the monitor screen..

a. Now centre the viewfinder picture by means of the centring rings on the deflection unit.
b. Adjust the picture height by means of 3673 on p.c. board N.
c. Adjust the picture width by means of coil 5662 on p.c. board N.

13. Viewfinder brightness/contrast

Place a grey-scale test chart in front of the camera and set the contrast control to minimum. Adjust brightness potentiometer 3672 so that the white block remains just visible. Now adjust contrast control 3663 so that all grey steps are individually visible.

14. Viewfinder focussing

Adjust potentiometer 3688 for optimum focussing of the viewfinder picture.

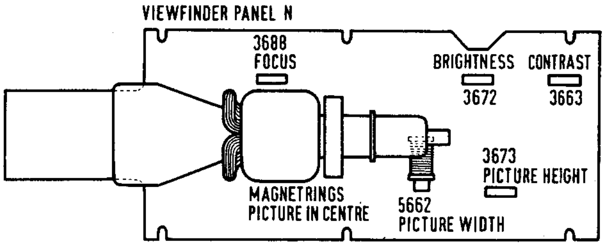
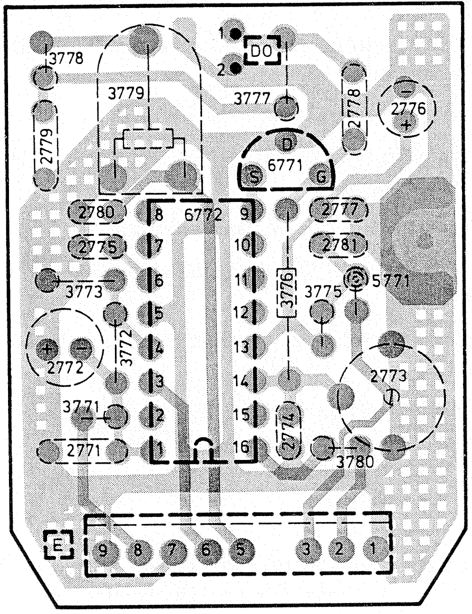

VIEWFINDER PANEL N
3688
FOCUS
BRIGHTNESS
3672
CONTRAST
3663
3673
PICTURE HEIGHT
MAGNETRINGS
PICTURE IN CENTRE
5662
PICTURE WIDTH
17593B3

Fig. III-5

CHAPTER IV

Page		Fig.
IV- 1	Wiring diagram camera	IV- 1
IV- 2	Interconnections between panels and connectors in camera	IV- 2
IV- 3	Printed board A: Carrier	IV- 3
IV- 4	Circuit diagram B : Registration and white balance	IV- 4
IV- 5	Printed board B	IV- 5,6
IV- 6	Circuit diagram C : DC-DC converter	IV- 7
IV- 7	Printed board C	IV- 8,9
IV- 8	Circuit diagram D: Tube sockets + vidicons	IV-10
IV- 8	Printed board D	IV-11...14
IV- 9	Circuit diagram E :Pre-amplifiers	IV-15
IV- 9	Printed board E	IV-16,17
IV- 9	Printed board :Backlight compensation- and sensitivity-switch panel	IV-18,19
IV-10	Circuit diagram F : Video processor I + sensitivity switch	IV-20
IV-11	Printed board F	IV-21,22
IV-12	Circuit diagram G: Video processor 2 + backlight compensation switch	IV-23
IV-13	Printed board G	IV-24,25
IV-14	Circuit diagram H: PAL-encoder	IV-26
IV-15	Printed board H	IV-27,28
IV-16	Circuit diagram K: Dark current	IV-29
IV-17	Printed board K	IV-30,31
IV-18	Circuit diagram L : Pulse generator	IV-32
IV-19	Printed board L	IV-33,34
IV-20	Circuit diagram M: Microphone amplifier + LED panel	IV-35
IV-21	Printed board M Printed board LED panel (see wiring diagram camera)	IV-36,37
IV-22	Circuit diagram N: Viewfinder	IV-38
IV-23	Printed board N	IV-39,40
IV-24	Circuit diagram S : Deflection	IV-41
IV-25	Printed board S	IV-42,43
IV-26	Circuit diagram : Adapter	IV-44
IV-27	Wiring diagram : Adapter	IV-45
IV-28	Printed board Supply panel	IV-46
IV-28	Printed board Rectifier panel	IV-47

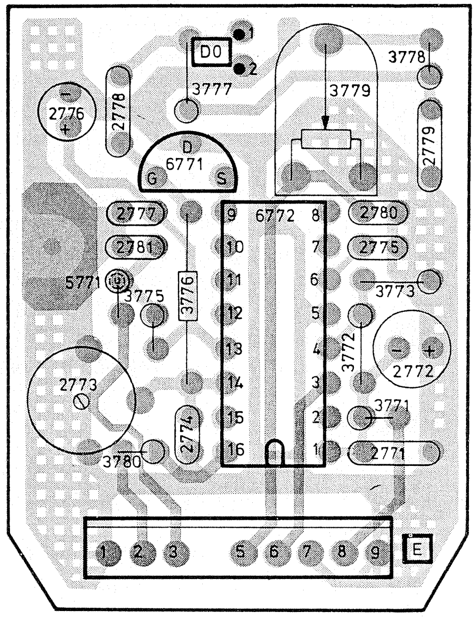
PRINTED BOARD E
PRE-AMPLIFIER R,G,B


3778
3779
1
2
DO
3777
2778
2776
2779
D
6771
S
G
2780
6772
2777
2775
2781
3773
3776
3775
5771
2772
3772
2773
3771
2771
2774
3780
E
9
8
7
6
5
3
2
1

2···	3···	5···	6···
	3778		
	3779		
2776	3777		
2778			
2779			
			6771
2780			
			6772
2777			
2775			
2781	3776		
	3773	5771	
	3775		
	3772		
2772			
2773			
	3771		
2774			
2771			
	3780		

22200B4

Fig. IV-16A


DO
1
2
3777
3778
3779
2776
2778
2779
D
6771
G
S
2777
6772
2780
2781
2775
5771
3775
3776
3773
3772
2772
2773
2774
3771
3780
2771
1
2
3
5
6
7
8
9
E

22201B4

Fig. IV-17A

IV-8-II

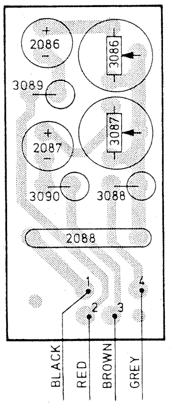
VIDEO CORRECTOR PANEL V

After replacement of one or more vidicon tubes or the prism, or as a consequence of ageing, it may occur that the picture shows inadmissible colour stains.
A possible cause of this defect could be an unequal sensitivity of the target surface.
The incorporation of a video corrector panel will then allow to vary the gain of the red channel and the blue channel at frame frequency, thus producing a possibility to eliminate unwanted differences in output.
For this purpose a saw-tooth (AC) signal of which amplitude and polarity are adjustable, is fed into the gain control input of the processing IC TDA1500. Thus the colour stains are brought to inconspicuous brightness variations.
The saw-tooth signal is taken off from output 14 of IC6176 on the deflection panel S. See Fig. IV-51 (situation A code number panel V 4822 212 50109).

Installation

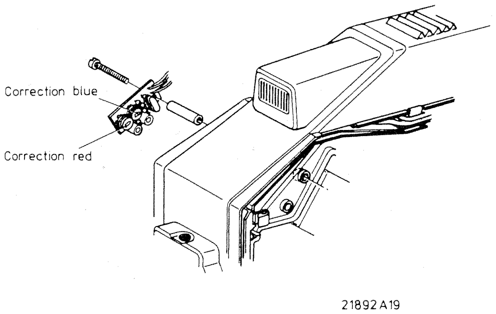
- The video corrector panel V is mounted in the space above the RGB block, just below the microphone grille. See Fig. IV-50.
- The co-supplied press-in nut can easily be pressed into the indicated hole of the RGB block by means of a hot soldering iron.
- The panel is then fixed by means of the screw and spacer.
- Connect point 1 (black lead) to earth
  Connect point 2 (red lead) to point 14 of Panel F (Videoprocessor 1)
  Connect point 3 (brown lead) to point 18 of Panel F (Videoprocessor 1)
  Connect point 4 (grey lead) to point 14 of IC6176 on deflection panel S. See Fig. IV-51.

PRINTED BOARD V


2086
3086
3089
2087
3087
3090
3088
2088
1
2
3
4
BLACK
RED
BROWN
GREY

22203 A4

Fig. IV-49


Correction blue
Correction red

21892 A19

Fig. IV-50

Adjustment

- *Direct the camera at an equally illuminated white surface*

a. Check and, if necessary, correct the sensitivity adjustment of Proc. 1 panel F. See Chapter III, point 10.

b. Connect one input of the dual trace oscilloscope to 5A11 (service plug).

c. Connect the other channel to 6A11.

d. Adjust 3086 until the two video signals coïncide as much as possible.

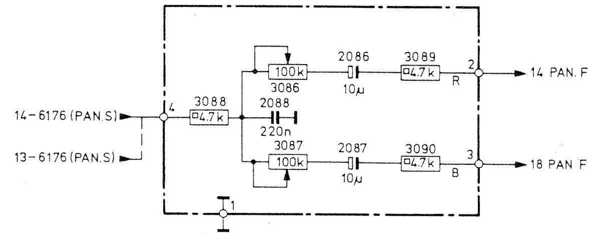
e. Connect the B input of the oscilloscope to 7A11.

f. Adjust 3087 until the two signals coïncide as much as possible.

g. Check and, if necessary, repeat the operations a to f.

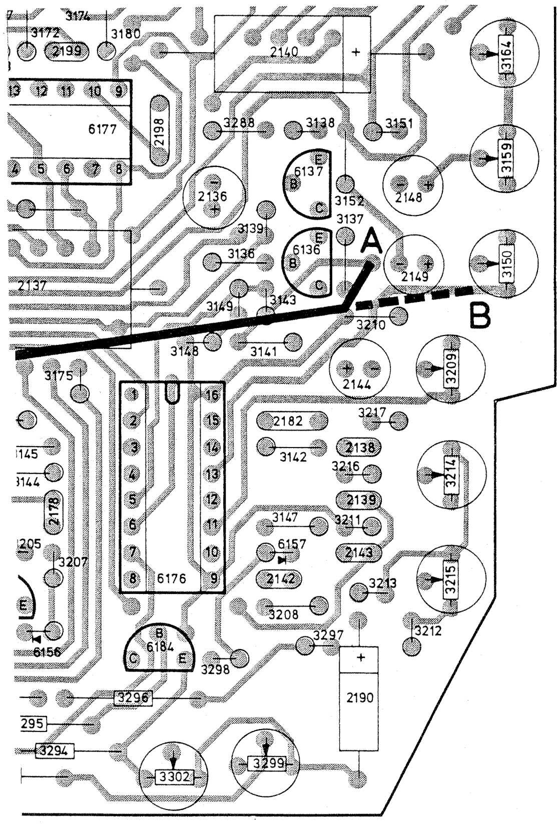
Note:
In case the control operates in reverse direction, the grey lead should be connected to point 13 of IC6176.
See Fig. IV-51 situation B.

CIRCUIT DIAGRAM V: VIDEO CORRECTOR


100k
3086
2086
10μ
3089
4.7k
R
2
14 PAN. F
14-6176 (PAN.S)
4
3088
4.7k
2088
220n
13-6176 (PAN.S)
3087
100k
2087
10μ
3090
4.7k
B
3
18 PAN. F
1

22202 A4

Fig. IV-48


A
B
6176
6177
6137
6136
6184
6157
6156
2140
2190
3164
3159
3150
3209
3214
3215
3302
3299

22240 B4

Fig. IV-51

CHAPTER V

Page		Fig.
V-1	Exploded view camera	V-1
V-2	Exploded view adapter	V-2
V-3	List of mechanical parts	
V-3...5	List of electrical parts	

CHAPTER VI

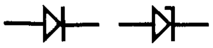
Additional Service Information

ADAPTER

Supply panel	4822 216 90454
Rectifier panel	4822 216 90455
Interface /00	4822 212 50087
Interface /15	4822 212 50108
Modulator /00	4822 216 90448
Modulator /15	4822 216 90449
Mains cord /00	4822 321 10244
Mains cord /15 without mains plug	4822 321 10251
UHF-cable	4822 321 20413
Camera connecting cable with connector XM3	4822 321 20414
Mains inlet XM1	4822 265 20169
Coax connector XM2	4822 265 10021
Camera cable connector XM3	5322 265 54048
Transistor socket XF1, XF2	4822 255 40171
BNC connector XF3	4822 267 10062
Remote control connector XF4	4822 267 40365
UHF cable connector male	4822 264 10052
UHF cable connector female	4822 264 10051
IC socket	5322 267 54064
Mains switch S1	4822 276 10766
Mains transformer T1	4822 146 40257
Temp. fuse of transformer FT1	4822 252 20007
Fuse 3.15 AT	4822 253 30027

IC LM324	5322 209 85899

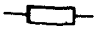
BC328	4822 130 44104
BC338	4822 130 44121
BC548B	4822 130 40937
BC558B	4822 130 44197
BD201	5322 130 44325
BD202	5322 130 44324



BAW62	4822 130 30613
BY206	4822 130 30839
BY225-100	4822 130 30917
BZV12	5322 130 34269
BZX79B6V2	4822 130 34167

220 Ω potmeter	5322 101 14009

1 Ω	Safety resistor 0.33 W	4822 111 30215



0.39 Ω	Wire wound resistor	5322 113 60093

MR30 0.5 W metal film resistor

100 Ω	3978	5322 116 54852
332 Ω	3980	5322 116 55031
2.15 kΩ	3979	5322 116 55253
2.2 kΩ	3982	5322 116 50102

2.2 μF - 63 V	4822 124 20724
47 μF - 25 V	4822 124 20699
100 μF - 25 V	4822 124 20701
220 μF - 16 V	4822 124 20693
470 μF - 16 V	4822 124 20695
15000 μF - 16 V	4822 124 40287

Service Information

1980 - 7 - 14

VIDEO COLOUR CAMERA V200

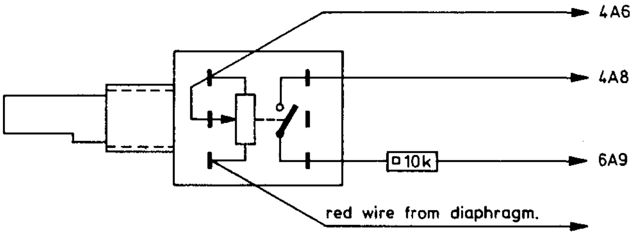
VC 80-01

MANUAL DIAPHRAGM FACILITY IN V200 CAMERA

Service ordering code 4822 101 20578

Mounting Instructions:

- Remove both side covers.
- Bring the contours of the 8.6 mm hole into the plastic handgrip with a sharp object (see Fig. 1)
- Remove both handgrip halves.
- Drill a hole of ± 9 mm into the handgrip.
- Cut the red wire from the diaphragm to 4A6 near the plug A6.
- Wire the potentiometer acc. to Fig. 2
- Mount the potentiometer with the bracket in the camera (see Fig. 3).
- Turn diaphragm potentiometer 3126 to zero (CCW seen from the solderside of the carrier)
- Remount handgrip and side covers.



20757A12

Fig. 2

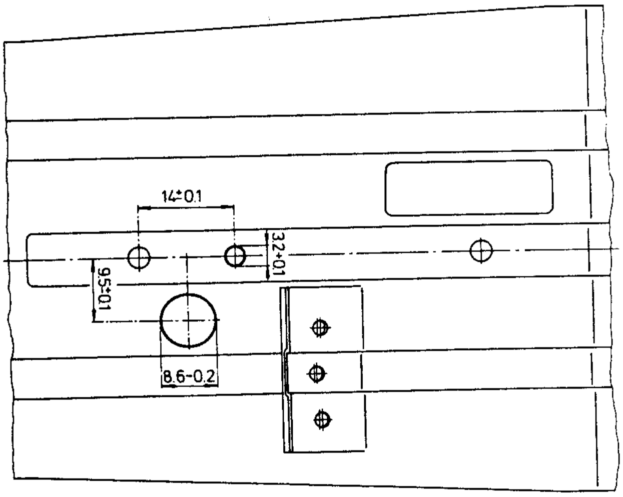


Fig. 1

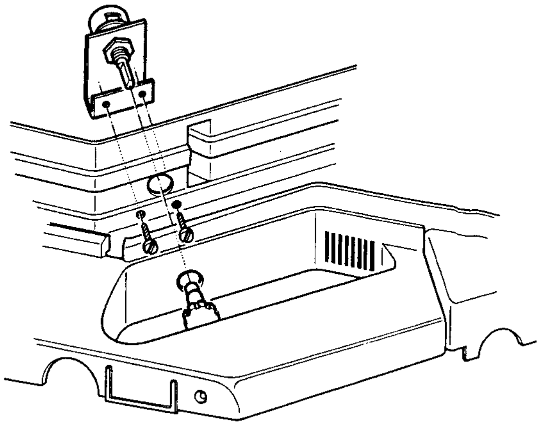


Fig. 3

Service
Service
Service
CS 71503

Concern Service - Eindhoven
Printed in the Netherlands

Service Information

1980-11-03

VIDEO COLOUR CAMERA V200

VC 80-02

Already published VC80-01

Contents:

Page IV-8 I, IV-8 II to be added in chapter IV between pages 8 and 9.

Page VI-1a to replace page 1 of chapter VI

Copyright reserved. Confidential information for Service-dealers

Printed in the Netherlands